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ABSTRACT

This document is the first issue of an annual journal produced by the Council of Environmental Education. It was designed to monitor the health of environmental education, help build coherence, identify gaps and issues, provide an evaluative review of the field, and present developments and practices in the field. Contained in this volume are editorials, reviews of the year, six research reports, aspects and developments, reports for member organization, two case studies, opinions and reflections, two articles on educational developments affecting environmental education, international developments, and book reviews. The scope of the articles in this issue is wide, and includes global issues, international conferences, local issues and strategies, and industrial involvement. (CW)

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AREE

ANNUAL REVIEW OF ENVIRONMENTAL EDUCATION

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FIRST ISSUE

AREE

The Annual Review of
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Editorial Policy

AREE's purpose is to monitor and encourage progress in environmental education. In particular, it aims to:

- provide a critical overview of the progress of environmental education in the UK
- report on significant research and initiatives related to environmental education
- report on developments in other areas of education which will affect environmental education.

Articles relating to practice and methodology will not normally be included in the journal.

Its goals are to:

- assist and encourage all those interested or involved in working in this area by providing a coherent and authoritative review of the year
- help win increased support and recognition for environmental education amongst decision makers at all levels.

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Editorials

Welcome to AREE

The *Annual Review of Environmental Education* is a new journal produced by CEE which sets out to monitor and encourage progress in environmental education.

In planning this journal we did not want to produce a periodical which simply describes work carried out in environmental education. Instead, we wanted to monitor the health of environmental education, to help build coherence, to identify gaps and issues, to provide an evaluative review of the field, as well as present developments and good practice. It is not, of course, intended to be comprehensive. (To do justice to the good work going on in environmental education, one would need to compile a book each year!) Neither is it concerned with fieldwork/classroom methodology. Already there are a number of excellent journals which cover these aspects.

The contents of this first issue testify to the quality and relevance of environmental education today. We hope that *AREE* will help build the support and recognition that environmental education needs and deserves, and that you find *AREE* stimulating and helpful. Your comments are welcomed.

The Editors

Soundings

We asked Timothy O'Riordan, Philip Neal and Peter Martin to voice their opinions on some aspects of the progress of environmental education, as 'guest editorials'. (A lady contributor was unable to oblige). The opinions expressed are personal and do not represent the authors' institutions.

An environmental education agenda for the 1990s

Timothy O'Riordan
Professor of Environmental Sciences at the University of East Anglia

It is tempting to believe that everything is OK in the British environment. The Government has launched UK 2000, a clean up campaign that seeks to provide training for recycling and restoration management. Designation of Environmentally Sensitive Areas allows the Ministry of Agriculture, Fisheries and Food to pay volunteering farmers to conserve, not to over produce. Three coal-fired electricity generating stations are to have sulphur dioxide and nitrous oxides removed in an attempt to limit the massive contribution Britain makes to the acidification of the European environment. Controversial shallow level radioactive waste disposal proposals have been abandoned to leave the problem to be solved on another day, and both the Nature Conservancy Council and the Countryside Commission have been given increased funding, in a time of austere public spending.

But this would be a naive view, duped by government propaganda. British agriculture is steadily polluting watercourses, aquifers, the soil and ourselves. Industry is cutting back on environmental protection expenditures when not required to clean up by public relations advisers or regulators. The government is starving the custodial agencies of money and resources so the best people are leaving and well-trained successors cannot be found. Monitoring of environmental change is not comprehensive, is underfunded and is not published in an intelligible and accessible form. Official aid to the poorest areas of the Third World is far too little and is often tied to projects that worsen the

environmental plight of those most in need. Too much depends on philanthropy and the voluntary sector wherever it is active.

Yet the globe is facing a major crisis as critical environmental cycles of sulphur, nitrogen, carbon and water are being thoroughly disrupted to the point where the restorative mechanisms may not be able to cope. Poverty and environmental deterioration breed hardship and military instability, which creates a whirlpool of suffering especially for women and children. National governments, driven by a need to retain their political support amongst the urban wealthy by servicing consumerism, default on their global obligations.

Few can see that we all lose if poverty and injustice is allowed to spread amongst the less fortunate. The globe may well not stand the strain.

Environmentalism must be seen as a force for good, not a brake against so-called progess. The agenda for environmental education is to ensure that the future generation is literate in the environmental sciences, so that it can use the principles of immutable environmental laws as the basis for planning and management and as a bulwark against greed and short-termism. Improved environmental understanding should also allow us to realise both what we are doing to the earth and ourselves. The new economics of environmental accounting, not dangerously simple minded monetarism, needs to become the common currency. It is possible to create a liveable as well as a sustainable environment, but that will require a radical new approach to environmental education and ordinary behaviour. ■

From the sublime to the core curriculum

Peter Martin
Senior Education officer at WWF

Many criticisms of the proposals for UK education reform have focused on a perception that they lack 'vision' or that they 'lack any reference to the school's role in developing attitudes, relationships and moral values'.

Such perceptions I believe are dangerously blinkered.

I would suggest that the proposals for change indicate a very clear vision of the sort of attitudes and moral values that society ought to have and a very clear vision of the role of education in promoting and maintaining them.

This vision for the future is based on the premise that human development and achievement of ideals can be best realised through the creation of wealth, that this can best be achieved through promoting self-interested competition and that the common good will emerge as a by-product of the struggle for material gain.

Given this view of the human condition then it becomes reasonable to propose a role for education that is controlled by market forces and that is designed to produce a society happy to furnish pyramids of achievement, status and reward with hierarchical layers of acquiescent people.

Given this view of education then we should not be suprised that all the hard fought battles that have achieved so much in developing good liberal and liberating education have been firmly and, I believe, deliberately ignored in the consultative documents.

Searching for small scraps of evidence in the rhetoric of the various documents that indicate or hint at support for environmental and development education is, I believe, a necessary effort but one which grasps at straws.

However, our main concern should not be about the exclusion of environmental and development education in the consultative document but about the fundamental image of society and education within society that the perpetrators of the education reform espouse. We should also be deeply concerned at the lack of public interest in the content of education.

Currently the government knows that the general public will accept education as a glorified youth indoctrination scheme because in general the public has a vision of education that moves from child minding to providing young people with the potential to get a job. Because of this we have no public mandate for environmental or development education - we have no mandate from the employers, neither do we have a mandate from parents.

However, are we guilty of hysteria just because environmental education was not mentioned in the consultative document? After all there has been a massive increase in the public awareness of the need for environmental conservation. It could therefore be proposed that environmental education has done its job wonderfully well and that, because of this, there is also no doubt that environmental education which promotes environmental conservation will still find a place in schools.

Personally I think hysteria is a mild response. Radical environmental education has a philosophy, content and methodology that is trying to influence the attitudes and values of society so that care and justice are integral elements of human behaviour out of which will inevitably come a careful treatment of the world's resources.

This style of environmental education can only flourish in a climate that perceives education in total in a similar way - remove that perception and environmental education has no place.

Obviously we need to try to minimise the damage that may occur during the next few years. But we now need to retrench and address the problem of developing a public mandate for liberal and liberating education for some time in a greener - or should it be redder? - future. ■

Environmental education in schools

Philip Neal
General Secretary of the National Association for Environmental Education (NAEE)

There is much splendid environmental awareness work going on in most of our schools. It may masquerade under a title such as topic work in the primary sector or insinuate itself into subjects as diverse as geography and English in secondary schools. The importance of environmental education is generally accepted, so it is ironic that the provision for it is seldom well-structured. It is often patchy and lacking in coordination. Many notable exceptions have been described in the reports of inspections by HMI but even here the inescapable conclusion is that insufficient time is given in most schools to establishing a policy for environmental education which provides for progression, an integration of ideas, continuity throughout the school years, a variety of teaching methods, evaluation of results and coordination between staff. For success in environmental education, the creating of an awareness of their surroundings must, above all, make good sense to pupils.

Why has this policy provision not been fulfilled? I should like to suggest some reasons.

1 Lack of communication
Those of us promoting environmental education have not made clear the amount of environmental involvement needed and have not communicated effectively the paramount importance of environmental learning.

2 Inadequate teacher training
Teacher trainers have not recognized sufficiently the needs of environmental education and new recruits come into our schools inadequately prepared to face up to environmental teaching and unable to contribute a fresh outlook.

3 Lack of confidence in handling environmental matters
Teaching methods in environmental education have to be more imaginative than in other curriculum areas. Teachers lack confidence to try new approaches and adequate resources to help them change direction.

4 The complexity of the environment
Environmental matters are never simple. Even those who seem to be on the same side are often at loggerheads.

5 Creating an environmental ethic
The failure to realise the importance of creating in everyone an environmental ethic - and the difficulty of defining in educational terms what such a statement means.

6 Controversy in the classroom
Environmental issues are often controversial - and an approach which may raise political, social or economic problems rarely wins friends.

7 The subject basis of teaching
Dividing knowledge into subjects is deeply ingrained in our educational fabric while environmental education is essentially cross-curricular.

8 An extra burden on the timetable
The belief that environmental education requires to be an addition to the school curriculum.

Let me translate this into reality. All over the country new teachers have settled into schools. I would highlight the problem of new staff members in their first school, keen to further environmental education. If they are fortunate the headteacher will recognise a minority subject called 'Environmental Studies'. It is unlikely that this head will be aware of the multi-disciplinary nature of environmental education[1]. In the secondary schools, at least, the timetable and school organisation will be faculty, department and subject based[2]. With something cross-curricular these new teachers will not know to whom to turn for help[3]. They will wish to take classes out of school but inevitably lack the confidence and 'know how'. Their heads will not (quite rightly) let probationers loose on the neighbourhood[4]. And if, after all, the headteacher and other staff are receptive to the furtherance of environmental education can new teachers be shown a copy of the school's objectives for this curriculum area together with evaluation and assessment procedures?[5]

So, who is to help them? If it is not CEE and its member organisations, then who is it?

Conclusions

[1] We (CEE and its member organisations) must mount an 'all out' awareness campaign directed at headteachers.
[2] Life is not little packets of separate history, geography, biology etc. We must promote barrier breakdowns.
[3] We must urge the creation of an environmental coordinator in every school and ensure that copies of our newsletters are prominent in every staff room.
[4] We must seek out teacher trainers and GRIST providers and encourage them to promote courses to prepare teachers for out of school study.
[5] Should the CEE do more to help?

But think back, you of the long tooth, to the 1960s. Then we even had to define the word 'environmental'. Have no doubt that we are winning! ■

Reviews of the year

Review of the year

What sort of year was 1987 for environmental education, and what are the priorities now? Stephen Sterling offers a personal assessment of 'the environmental education year'.

Stephen Sterling
Executive Editor of AREE and a consultant in environmental education

The environmental climate - the broader context for environmental education

'This is the most important document of the decade on the future of the world.' So said the cover of *Our Common Future*, the report of the World Commission on Environment and Development (WCED) which was launched in April. For once, this was not publisher's hyperbole, for the 'Brundtland Report' (as it has come to be known after the WCED chairman Mrs Gro Harlem Brundtland) was - and is - highly significant. Based on nearly three years of research involving public hearings all around the world, and taking evidence from all sectors and strata of society, the Brundtland Report provides an urgent and authoritative reappraisal of the critical state of the global environment. In essence, its message reinforces earlier documents such as Brandt and the World Conservation Strategy but goes further by presenting

clear evidence to show that the world is not on a sustainable course, that 'we are rapidly closing the options of future generations'. A much closer harmony between economy and ecology is imperative says the Report, but it recognises that time to achieve this is short.

It is still too early to say what effect the Report will have. The immediate media attention in this country was slight, but like its predecessor the Brandt Report, its thinking should permeate at a deeper level. Its emphases are ecological security, cooperation, an integrated or holistic view of issues and of the world, and concern for present and future generations. Although these ideas challenge prevailing economic philosophies, the Report's grasp of global realities should, one hopes, ensure that the truth of its diagnoses and prescriptions becomes clearer as time goes by.

The other major environmental initiative - in this part of the world - was of course 'European Year of the Environment'. Designated by the European Community and running from March '87 and March '88 in the twelve European countries, the Year has given rise to widespread activities, events and initiatives. In the UK, these have been broadly related to the three themes of conservation of the natural environment; control of pollution and waste; the improvement of the urban environment. The extent and take-up of these activities has been impressive. Perhaps the time was right for a 'European Year of the Environment'.

Certainly, a number of opinion polls indicate that the public is far more interested in the environment than either general news coverage or the environmental policies of the present government would suggest. A survey carried out across Europe for the European Community in 1986 showed increased public concern for the environment (compared to a previous survey in 1982) with only one person in ten ranking the importance of environmental protection below economic development. This concern was also reflected in a WWF/Friends of the Earth MORI poll conducted in March of this year in the UK, the findings of which included 81 per cent wanting higher government priority given to protection of the environment. Some of this interest was reflected in the policies and statements of the political parties prior to the election, but the 'green' element in British politics has hardly been to the fore in the debate of the main parties since June and even less evident in the environmental policies of the government.

Elsewhere, the theme of environment has received some national attention from the efforts of UK 2000, which promotes practical conservation work by coordinating central funding with the efforts of several leading voluntary bodies. In addition, industry continued to show interest in the environment through sponsorship of environmental initiatives. Further, the RSA'S 'Industry and Environment' initiative sought to further the theme of good environmental practice amongst industry and bring examples to the attention of the travelling public through a mobile exhibition which toured stations.

Environmental education in LEA's

It seems clear that European Year of the Environment has been a significant boost to the level of activity and status of environmental education in local education authorities. It is always difficult in such circumstances to tell how far existing activities have used the label, and how much is new, but it does seem that many initiatives have taken place that would not have done so without the stimulus of EYE, that local networks have been strengthened, and environmental educators have been encouraged by the official support and recognition that EYE in many cases has brought to their efforts.

CEE's education pack undoubtedly acted as a catalyst in the generation of this environmental education work. Each authority was invited to contribute its own material to the pack, thus stimulating local involvement and greater acceptability and usefulness of the whole pack to the teacher. The fact that most of the packs went out with endorsement from the Chief Education Officer and that most LEA's took part in this exercise on a nationwide scale, lent a degree of status and coverage to environmental education that the area has probably never enjoyed before. The real test of course, will be whether ground gained during EYE will be maintained after this year.

At the non-formal level, a pilot project instigated by CEE in the West Midlands is a significant development in the area of youth worker training and the environment.

National Conferences

There have been a number of noteworthy conferences related to environmental education. These include the first National Conservation Conference, hosted by the Nature Conservancy Council and bringing together the many sectors and organisations concerned with conservation issues. One educational spin-off from this conference was an emphasis on training for countryside staff. Incidentally, the Peak National Park appointed a full-time training officer - the first UK National Park to do so. Another 'first' was the UK conference of the Institute of Earth Education (formerly Acclimatisation) which was held at Losehill Hall. Earth Education has continued to have an important influence on the ideas and methodologies of many environmental educators.

The importance of school grounds for environmental education (arguably first promoted by the Schools Council *Project Environment* in 1974) has received increased attention this year, partly due to the efforts of the 'Learning through Landscapes' project. An important conference 'External Environments for Education' organised by the Local Authorities Consortium took up the theme.

Going away from the use of the natural environment, the CEE two-day conference held in October took 'Building Positive Attitudes to the Urban Environment' as its theme. Broader still, the Scottish Environmental Education Committee have been running a series of workshops on aspects of conservation and development, related to the World Conservation Strategy. These will build up to a major conference 'Scotland 2000' in December, which will have an educational component.

While on the theme of global links, the annual conference of NADEC (the National Association of Development Education Centres) looked at environmental aspects of development issues, reflecting the increasingly commonality and complementarity perceived between environmental education and development education, and other related areas. This link was also echoed at a very successful NAEE/WWF conference held earlier in the year.

In all, it has been a very healthy year for national environmental education conferences. But as some critics say, the exchange of views and information does not always reach the ordinary teacher. From this point of view, the conference put on in October by the Centre for Study of Comprehensive Schools with sponsorship from Esso is deserving of mention. 'Environmental Issues in Schools' attracted nearly 200 delegates, many of them practising teachers and many of them attending such a gathering for the first time. Perhaps this was evidence of a new generation of teachers committed to environmental education.

International

At the international level, the key event was the 'Tbilisi plus ten' conference which in fact took place in Moscow in the summer. The title refers to the UNESCO 'First Intergovern-

mental Conference on Environmental Education' which took place in Tbilisi in 1977, and gave impetus to many programmes across the world.

The work of the IUCN Education Commission has proceeded, but to some extent has been hampered by changes of personnel. (Reports on Moscow and IUCN appear in this issue).

The WWF anniversary celebrations in Assisi in September of 1986 gave rise to a new 'Religion and Conservation Network' initiative which WWF International has promoted in 1987. This encourages religions and churches to focus on their teachings which relate to the natural environment.

We islanders should remember that EYE has also been taking place in Europe, and many of the UK events have had parallels in the other Community countries.

New journals

It is indicative of the strength of interest in the environment that several new periodicals have recently appeared. Not strictly aimed at the educational market but nonetheless both extremely useful are The *Environment Digest* which distills from the daily newspapers and other sources all the news pertaining to environmental matters, and *Environment Now* which as a general environmental magazine bridges the gap not filled since the sad demise of *Vole* some years ago.

Conservation is a new journal brought out by the Conservation Trust primarily for its members. Its membership levels shot up this year as many members of the Conservation Society transferred to the Trust when the former was formally closed down after some twenty years' existence.

Another new periodical is *Green Teacher* aimed mainly at committed 'greenies' in the classroom. Produced on a shoestring budget,*Green Teacher* has succeeded in finding an important niche by exploring links between environmental, social, development, personal and peace educations. We should also welcome another newcomer, *Humanities Resource* from the Integrated Humanities Association which seems to embrace the environmental dimension quite strongly.

Lastly, of course, 1987 saw (just!) the production of this journal, the *Annual Review of Environmental Education.*

Projects and trends

One aspect of environmental education which seems to be gaining increasing interest is that of values and ethics. Always implied but rarely clarified, this area gained attention with the publication of WWF's *Worlds of Difference* a few years ago, and may receive further notice with the impending production of WWF's *Worlds of Choice.* Perhaps inspired, or at least reinforced by the Brundtland Report, which emphasises the need for a holistic perspective, there is undoubtedly now some exploration of the meaning of holistic education.

Earthrights by the team at the Centre for Global Education (CGE) may be seen as an important advance in this respect. This book is the first product of the major 'Global Impact' study - still on-going at the Centre - which is looking at the progress that environment/development education has made. It would be easy to contrast the *Earthrights* emphasis on educating the whole person, balancing the cognitive and affective aspects, having regard to the well-being of the planet and future generations etc with the narrow, instrumentalist, and centralist vision that is being offered our schools today. Philosophically, the two approaches are pushing in different directions.

There is a danger that the broader view will be squeezed. To help counter this, and again, following the plea from Brundtland that economy, ecology and education be considered together, an interesting initiative, the 'Education Network Project' has been set up at the Sussex University to try to ensure that environmental and development education are considered at all levels of the educational debate.

Meanwhile, the televisual media strongly took up the theme of global education in 1987, and some at least of this effort can be directly attributed to the impetus lent by the Brundtland Report. Relevant output here included *Only One Earth* (BBC), *Turning the Tide* (ITV), *Earth* (ITV), and *Battle for the Planet* (IBT and Channel 4). Most of these series had or will have formal education spin-off. This year also saw the strengthening of the media's move away from passive viewing towards providing back-up materials and follow-up suggestions - an important trend educationally. This back-up material included two issues of the *EYE-TV* newspaper which was distributed to all schools to support environmental programmes on ITV and Channel 4.

As in previous years, the voluntary organisations continued to play a critical role in promotion of and support for the environmental education, not only in terms of resources, but also energy and ideas. It is probably wrong to single out any for particular attention, but the strong work of WWF, particularly in supporting imaginative curriculum development schemes in practically all areas of the curriculum is of real importance to the take-up of environmental education. Among smaller bodies, the WATCH/Field Studies Council 'Acid Drops' project on acid rain must count as a particularly successful example of a cooperative venture. The continuing support of professional bodies such as the RTPI and RIBA is an important aspect of the health, diversity and strength of the environmental education field. The YHA is setting up Britain's first residential urban study centre, in Bristol, which they hope will be the start of a re-awakened interest in developing a network of environmental centres in urban areas.

Research

Environmental education has long suffered from a real dearth of research. Methodology, effect, extent of practice etc, all have been under-researched for years, mostly because there has been a lack of interest by sponsors of all kinds. But this year, the picture has been brighter with the publication of the first report from the 'Global Impact' study, and the completion of 'Training and Education in Relation to Environmental Problems' and 'Environmental Education and Training in Industry' both carried out at CEE. In addition, a project undertaken for the Nature Conservancy Council on 'Environmental Education in Rural Areas' and a project on environmental education in schools carried out by the Conservation Trust were also completed this year. All these projects are reported in this issue of *AREE.* Other important pieces of work not reported here include an HMI report on urban study centres, and KBTG's 'School Links International' work. If there is one overriding conclusion from these projects it is that 'grass-roots' interest and enthusiasm is not matched by local and central government recognition of and provision for environmental education.

One way in which greater support could be given would be to provide for more research. It is something of a coincidence that the above research came to fruition in the same year. The outlook for new research in 1988 is relatively bleak by comparison.

Developments in education affecting environmental education

No reader will need reminding that 1987 saw moves towards far-reaching changes in education, many of which have had or will have implications for environmental education. On the whole, the advent of the GCSE examinations has been welcomed by environmental educators. In both content and methodology, many of the syllabuses give scope to

environmental approaches and concerns.

The GRIST arrangements for in-service training are exerting influence over the amount of environmental education INSET work going on. It is not necessarily bad news, particularly where the environmental education tradition is already strong, but in other areas GRIST will make the task of bodies wanting to offer in-service expertise or facilities that much more difficult.

The one initiative that everybody has an opinion on is of course the National Curriculum proposals. The reaction so far has been mixed, with some environmental educators feeling it regrettable that 'environmental education' was not mentioned in the consultative document but believing that EE work will still go on much as before. Others are a good deal more worried, particularly as the ramifications of the proposals are yet to become apparent. The findings of the Subject Working Groups, who are supposed to be considering cross-curricular aspects, will influence the amount of environmental education that is undertaken and in the present climate, there can be no guarantee that they will understand or take on board the importance of environmental education.

Areas of concern

Much of the above is clearly a source of encouragement. There is undoubtedly a great deal going on in the field of environmental education. Yet there are clear gaps and problems associated with the whole area.

The overall situation may be summed up as this. The Brundtland Report has given environmental education a renewed mandate and a legitimacy of the utmost importance, in terms of its contribution towards attaining a sustainable society and a liveable environment. In addition to the *environmental* benefits of EE, many educators are realising its *educational* benefits. However, the main drive and impetus for environmental education work continues to come from two sources - ordinary teachers, and voluntary bodies. Overall, the resources and recognition provided by local and central government are not commensurate either with the need for or the general level of interest in environmental education. As a result, it suffers from serious handicaps. For example, there is still woefully inadequate pre-service and in-service education for teachers. Most teachers involved in environmental education have had no training in the area. (In this respect we must look forward to the outcome of WWF's 'Teacher Education Project'. Is it significant that it has taken a voluntary body to set up this initiative?) Secondly, it still lacks status and therefore has few resources allocated to it. Thirdly, little work as regards progression has been done, as research funding for proper evaluation and development of environmental education methodologies is not forthcoming.

There are formidable obstacles, but they *could* be overcome with sufficient organisation and lobbying by all those involved in the field. This at minimum will necesitate that the diverse strands and emphases of environmental education recognise their commonality and absolute need to work together. We should not be worrying overmuch about preserving the diversity and energy of the 'grassroots' - they are unlikely to be lost. But in today's world they won't be enough. We have to do whatever is necessary to make environmental education an integral and mandatory part of education.

We are grateful to members of the Editorial Advisory Board and others who were consulted on the content of this article. Responsibility for the final selection and interpretation of material is the author's. ■

In order to ensure even coverage, we asked **Ian Pascoe** and **Alan Young** to report from Scotland and Wales respectively.

Scotland

I P Pascoe

HM Inspector of Schools, National Specialist in Environmental Education

1987 has been a good year for environmental education in Scotland. It included the first part of the European Year of the Environment (EYE), the introduction of core funding for some environmental organisations and the continuation of several major initiatives with implications for environmental education.

The introduction of core funding took place through the medium of the Special Grants (Environmental) Programme of the Scottish Development Department and brings Scotland into line with the rest of the United Kingdom. In addition to a number of purely environmental groups, two organisations which are prominent in environmental education were given grants. The Scottish Field Studies Association, which is the Scottish equivalent of the Field Studies Council, appointed a development officer and the Scottish Environmental Education Council (SEEC), the Scottish equivalent of CEE, was able to appoint its first member of staff, a Director (Mrs Kate Sankey). The effect of these appointments will, of course, be long term but they should lead to other changes and to significant improvements in the provision of environmental education.

SEEC's annual conference took place in April, and was a great success. The attendance was the largest for many years and included a substantial number of teachers. The programme included the launch of SEEC's *Curriculum Guidelines for Environmental Education* and the document was considered to be a valuable contribution to the development of environmental education in schools.

Part of the Scottish Education Department's (SED) contribution to EYE was a survey of environmental education in eleven primary and seven secondary schools in the West of Scotland. The survey revealed that a good variety of high quality, innovative work was going on in the schools visited, despite many problems. It was clear that schools could overcome the logistical and financial problems inherent in taking pupils out of school, given sufficient determination, but that escalating costs and stricter standards of supervision were limiting the number of outgoings which could be undertaken.

The contribution of the SED's Primary Education Development Project (PEDP) to environmental work was already apparent in two of the schools. This five year programme is now in its fourth year and is increasing the number of pilot schools and involving more education authority staff.

PEDP held a national conference at Jordanhill College in September and this had a large attendance, another sign of the commitment of teachers and their education authorities to the environment. The conference included discussions of trial versions of some of the packages of materials which are to be used in project work in schools and of some practical guides which give advice to teachers on how to organise, for example, programmes of environmental studies and fieldwork. It is intended that these materials will be published at the end of the project.

This project, together with the continuing development of new Standard grade and National Certificate courses in secondary schools, give schools the best framework to carry out environmental work they have ever had. I hope that many of them will follow the example of the schools in the survey and show determination and ingenuity in making the opportunity become practice. ■

Wales

Dr Alan Young

Head of Environmental Studies, Gwent College of Higher Education, Caerleon

Whither Environmental Education in the Principality? Is there life after Baker? Many primary schools throughout Wales, greatly skilled in using the environment to develop a wide range of cognitive skills in their children, wait anxiously for a clear curricular picture to emerge.

Initiatives in environmental education, however, still proceed. The school returns from Project Cynefin are being analysed and will shortly be available to all schools by means of the NERIS network. Over sixty schools in Wales are participating in the WATCH 'Acid Drops' survey and, additionally, will be asked to monitor acidity in lakes and streams in Wales.

In curriculum terms, Magor School in Gwent is developing a series of assessment procedures to monitor, in their children, the development of historical, geographical, scientific and social skills through an environmental studies programme.

The Crynallt Junior School, Cimla in Neath is using environmental experiences to produce splendid examples of 'language across the curriculum'. Unfortunately the Milford Haven Central Secondary Conservation Society will, like the school, draw to an end. The school's Conservation Society has been a regular winner of national awards and it is to be hoped that it will emerge, unscathed, from the mire of County reorganisation.

These specific, isolated examples cannot indicate the true strength of environmental education in Wales. This stems from a tradition of environmental concern, the influence of the Schools' Council Project *Environmental Studies 5-13*, which involved mainly Welsh schools and a rapidly changing social environment. It was a Newport (Gwent) man, W H Davies, who wrote:

'What is this life if full of care,
We have no time to stand and stare...'

Many thousands of children throughout Wales have had the opportunity to observe their environment, to record their observations in a number of ways, to become aware of, and concerned for, change and development in their environment and to study environmental problems and offer considered solutions.

If such good practice is to continue, then another Old Newportonian (Kenneth B) must ensure that schools are allowed to use their experience and professionalism in the interpretation and operation of a changing curriculum. ■

Quotes

'In addition to those non-foundation subjects which are taught separately, there are a number of topics such as environmental education which can be taught and experienced through other timetabled subjects and may benefit from such treatment. We intend such topics to be taught as part of the relevant foundation subjects so that they will be available to all pupils but will not encroach on the time available for other optional subjects...'
From a letter from Kenneth Baker, Secretary of State for Education, September 1987.

'In environmental terms, investment in young people is perhaps the best investment of all.'
Lord Belstead (Minister of State for the Environment, Countryside and Water) speaking at the CSCS Conference 'Environmental Issues in the Secondary School Curriculum' at Nottingham University, October 1987.

Research reports

Global Impact - progress report

With increasing interest in and overlap between environmental and development education, the 'Global Impact' project set out to look at the extent to which this interest is reflected in practice both in schools and amongst interested organisations. Sue Greig reports on its progress.

Sue Greig

Research Fellow for the Global Impact project at the Centre for Global Education

The context

'Global Impact' is a three-year research project (starting date January 1986), funded by the World Wildlife Fund-UK and coordinated by the Centre for Global Education (CGE) at the University of York. The project takes as its starting point the two related educational initiatives of development and environmental education. Historically, each initiative has had its own separate area of concern, namely the 'natural', and often local, environment and the 'Third World' respectively. Over the last fifteen years or so, in order to make sense of the increasingly interdependent world in which we live, both fields have begun to adopt a broader and more global focus, reflected in the recent statements such as the Tbilisi recommendations on goals for environmental education

and the NADEC description of the objectives and concerns of development education[1]. Several international initiatives, notably the World Conservation Strategy[2], the publications of the Brandt Commission[3], and most recently, the World Commission on Environment and Development's final report, *Our Common Future* [4], have contributed to both this broadening of focus and to the growing awareness of the holistic and interlocking nature of environmental and development issues.

The aims of 'Global Impact' are to build on this broadening focus and convergence between development and environmental education, firstly through an *enquiry phase*, which seeks to find out to what extent holistic thinking is actually reflected in educational practice, both in schools and in organisations active in these fields, and secondly an *action phase* which will, in conjunction with others active in the field, identify and start to implement strategies for change. In this article I intend to outline our progress partway through the enquiry phase.

First year survey

In the first year of the project, we set out to look at the work of the many non-governmental and statutory organisations active in environmental and development education (EE and DE) and at the impact (or lack of it) which their work is having on the curriculum of our primary and scondary schools. We were also concerned to find out something about the attitudes of teachers and of those working in environmental and development organisations to DE and EE in general, and the extent to which they felt that the two fields were interrelated and interdependent. We conducted two complementary surveys, by questionnaire, one of teachers in primary and secondary schools and the other of non-governmental and statutory organisations.

In the survey of teachers the main areas covered by the questionnaire were:

- principal themes/topics dealt with in the classroom;
- teaching/learning styles used;
- types of resources found most useful and those most frequently used;
- sources of resources, or information about resources;
- attitudes/opinions on relevance or importance of environmental and development issues and on possible constraints in dealing with such issues in the classroom;
- opinion on the importance of various aims in education and the methods which best achieve those aims;
- opinions on global, development and environmental education including the extent to which the latter two are overlapping in their concerns.

The areas covered by the second questionnaire were:

- types of resources produced and the topics addressed (using the same list of themes as in the school questionnaire);
- teaching/learning styles suggested or encouraged;
- services provided (such as visiting speakers, etc);
- the ways in which resources or services were promoted and ways in which contact was made with teachers;
- attitudes/opinions on global, environmental and development education and on aims in education and the best ways of achieving these aims (this attitudinal part of the survey used the same questions as in the school survey).

Environmental education was rather narrowly seen

A total of 1 635 schools in 21 LEAs were involved in the school survey and completed questionnaires were received from 806 teachers. Five questionnaires were sent to each secondary school, (with a request that they were completed by teachers in different curriculum areas) and two to each primary school. Responses were received from 309 schools, a response rate of 19 per cent, which we found encouraging considering the school climate of teacher action at the time. Over 400 organisations, active in EE and DE locally and nationally, were circulated with the second questionnaire and 183 completed forms were returned (a response rate of 44 per cent). There is not space here to do more than outline some of the main findings of the survey and attempt to place them in the wider context of holistic education. (A full report is available from CGE[5].)

The school survey

The results, not unexpectedly, suggested a wide divergence in both practice and attitudes amongst teachers. There was an overall impression of large differences between primary and secondary school teachers; primary teachers indicated use of a wider variety of teaching methods, resources and activities. At the secondary level, the responses of science teachers suggested particular narrowness and lack of diversity in both teaching content and methodology. In terms of content, of 49 broad environmental and development themes offered on the questionnaire, 12 were dealt with by more than 30 per cent of science teachers, and the corresponding figures for English/language, humanities and art/design/music/PE were 16, 33 and 3 respectively; for primary school teachers the figure was 25.

Although overall 81 per cent of teachers indicated that they thought exploration of values was crucial or very important in DE and EE, this was not uniformly reflected in the teaching and learning approaches used. In secondary schools, with the exception of English and foreign language teaching, the focus was significantly less often personal compared with teaching in primary and middle schools. Also, there was a relatively low use of teaching methods which particularly address affective aims (eg cooperative learning), particularly in secondary teaching, and especially in science teaching.

Turning to the constraints that teachers feel when dealing with development and environmental issues, age was not a major factor, with less than 5 per cent of secondary teachers feeling that their students were too young to develop global awareness or empathy with people from other cultures. However, this view was expressed by 16 per cent of primary teachers, despite a growing body of research which suggests that the development of global perspectives can and should start at the very beginning of the primary school years.

The political and controversial perception of EE and DE clearly acted as a constraint for a significant proportion of primary teachers, and for science teachers and art/design/music/PE teachers, more than for secondary teachers in other areas of the curriculum. The political, social and economic aspects of both EE and DE were felt be of less importance by primary teachers and by science and art/design/music/PE teachers. Interestingly, the groups which dealt least with the futures theme were primary teachers, science teachers and those with over 20 years teaching experience.

In general, the term 'global education' was understood relatively narrowly, and wider meanings such as the notion of the global within the local and the importance of a futures dimension were not recognised. The term 'development education' confused some respondents; 2 per cent indicated that they had not heard of it at all and approximately 20 per cent failed to answer the question related to the understanding of DE. The wider meanings of DE were often not recognised; eg looking at different forms of development and the importance of the development of the local community. Environmental education too was

rather narrowly seen; learning about the built environment and active involvement in environmental improvement and protection were regarded as less important. In both cases, active involvement and understanding political, social and economic structures were regarded as of less importance compared with concepts of interdependence and personal concern and responsibility.

78 per cent of primary and secondary school teachers think that development and environmental education are central to achieving an understanding of, and active participation in the world today

Overall, however, the majority of teachers expressed extremely positive opinions about development and environmental education:

- 75 per cent of teachers think that 'developing an understanding that the world is an inter-related, interdependent system of land and peoples' is very important or crucial in the promotion of a global perspective in education.
- 46 per cent of teachers indicated that their school had policies or guidelines which feature environmental education.
- 69 per cent of teachers think that environmental and development education are relevant to their subject areas.
- 67 per cent of teachers think that the political aspects of development and environmental education are not too controversial to be dealt with in the classroom.
- 88 per cent of primary and secondary school teachers think that the children they teach are not too young to develop global awareness or empathy with people from other lands and cultures.
- 78 per cent of primary and secondary school teachers think that development and environmental education are central to achieving an understanding of, and active participation in the world today.
- 65 per cent of primary and secondary teachers would welcome in-service training on ways of incorporating development and environmental issues into their teaching.

The survey of non-governmental and statutory organisations

Over 40 per cent of the organisations which completed questionnaires were national, the remainder being local. A large degree of compartmentalisation was seen in the resources produced by these organisations. Environmental and development organisations tended to produce resources addressing distinctly different themes. Of 49 themes presented, there were only six which over 30 per cent of environmental organisations covered in their educational material, compared with 21 in the case of development organisations. Also, resources produced by environmental organisations were more likely to be directed at specific areas of the curriculum, namely environmental studies, biology, geography and, perhaps surprisingly, art. Where specific curriculum areas were mentioned by development organisations, geography, social studies and humanities were most frequent. Environmental organisations were more likely to produce resources with a local focus, whereas material from development organisations more often focused on countries other than the UK or took an international view. Junior and secondary school students were equally well catered for by both types of organisation, but the nursery/infant group received less attention.

In those cases where teaching/learning styles were suggested or encouraged, the emphasis was on group project work and discussion, action projects and fieldwork. Role play, teacher input, cooperative learning all came relatively low down on the list. Although 87 per cent of respondents indicated that they felt that exploration of values was very important or crucial in this area of education, this was not translated into appropriate methodological approaches in their educational material. Interdependence was stressed by the great majority of all respondents as a central concept in global education.

Interestingly environmental organisations placed more emphasis on the futures dimension of global education, although, again, this was not reflected in the actual resources which they produced. There was a marked divergence in the understanding of DE between different types of organisation. Environmental organisations emphasised the more conservative, paternalistic aspects, as in 'helping others less fortunate than ourselves', whilst development groups thought the social, political, economic aspects of development education were of greater importance. A similarly conservative view of EE was given by environmental groups, a view which stressed basic ecological principles and endangered species, whilst again eschewing the social, economic and political aspects. These differing attitudes to DE and EE clearly influenced the dominant themes addressed in the educational resources produced by these organisations. Environmental groups indicated a less holistic view of EE and DE, in terms of the extent to which their concerns are overlapping, when compared with development organisations. However, these results should be interpreted cautiously since one or two of the more radical environmental organisations, such as Friends of the Earth and Greenpeace, were not included in the survey (because they did not return questionnaires).

How well then do the organisations involved in the survey appear to meet the expressed needs of teachers? In terms of the themes addressed by the available resources, the apparent supply from organisations did not always match apparent demand from teachers. Themes for which demand exceeded supply were climate, disasters, energy, fairness, health, transport, cooperation and conflict, industry, leisure/recreation, media, myself and family, other lands and peoples. Of these energy, health, industry and transport were particular areas which a majority of respondents in both surveys felt were of relevance to development and environmental education; these could therefore be particularly fruitful starting points for the further development of resources. Teaching and learning styles which were encouraged by organisations through their resources, and which tended to be used less by teachers, were action projects and fieldwork; the converse was true of teacher input and cooperative learning. Between 30 per cent and 40 per cent of teachers surveyed felt that there was a lack of resources available for development and environmental education both generally and for their subject areas in particular, and that it was difficult to obtain information about this field; the proportions expressing these opinions were higher amongst middle and secondary school teachers, and amongst teachers of all curriculum areas except humanities. Where resources were produced for specific curriculum areas, geography, biology and art figured most often. There is clearly a need for resources which are more accessible to teachers of, for example English, modern languages, maths, physical sciences, music, design, PE.

Towards a synthesis

In an attempt to draw some of the threads of these results together and to put them into the wider context of holistic education, I have tried to represent the responses according to a framework described by two axes. The first axis is pedagogical; from

the traditional, didactic, hierarchical model of teaching, characterised by emphasis on acquisition of knowledge and teacher as expert, to the student-centred, active, experiential approach with teacher as facilitator. The second axis I am going to call 'worldview' and this ranges from the reductionist, compartmentalised view of reality where there is separation between fact and value and between the objective and the subjective, to a holistic and systems view of reality, where fact and value, subject and object are regarded as untenable distinctions. The locating of the different groups involved in the two surveys within such a framework may then give us some understanding of their relationship to holistic thinking within development and environmental education (Figure 1).

There is a growing body of evidence and writings supporting a holistic worldview, and one which allows a better understanding of ourselves and our relationship with each other and with the planet. Such a systems view cannot be understood on a purely cognitive, intellectual level and so it necessarily involves a rethinking of traditional teaching and learning approaches. There is widespread interest and support amongst teachers for environmental and development education. The task of furthering the holistic approach will involve a combination of provision of appropriate resources and, probably more crucially, in-service work and workshop experiences, tailored to individual needs and situations, which bring the ideas and experience of those in the bottom right hand corner of Figure 1 into interaction with the other groups represented.

Our enquiry phase now continues through case study work, in schools and in local and national organisations active in development and environmental education. Through this, we hope to look in more detail at the development and implementation of curriculum innovation in this vital area.

Those interested in this work may contact the project at Global Impact Project, Centre for Global Education, University of York, York YO1 5DD.

References

[1] See: S A Greig, G Pike & D Selby, *Earthrights: Education as if the planet really mattered*, WWF-Kogan Page, 1987 p 25, 26.

[2] *World Conservation Strategy*, IUCN, WWF, UNEP, 1980.

[3] Brandt Commission, *North-South: A programme for survival* and *Common Crisis*, Pan, 1980 & 1983.

[4] The World Commission on Environment and Development, *Our Common Future*, Oxford University Press, 1987.

[5] S Greig, G Pike, D Selby, *Global Impact - The Final Year Report*, GCE, 1987. (£2.00 plus p+p.) ■

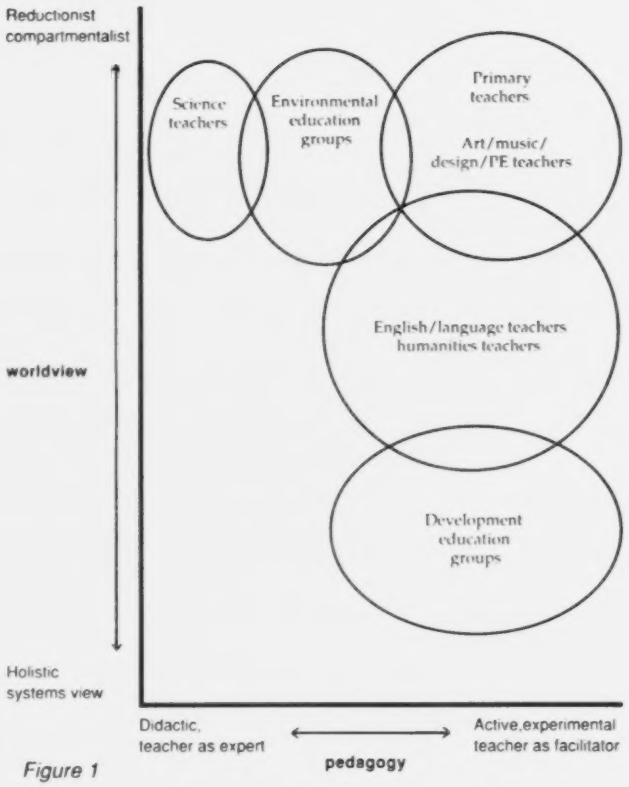

Figure 1

Training and education in relation to environmental problems

Chris Gayford reports on research he recently completed which looked into the nature and effect of environmental education. The research provided evidence of the effectiveness of environmental education, but raised questions with regard to the availability and organisation of courses.

Dr Chris Gayford

Lecturer in Education at the University of Reading and a consultant to CEE

For more than 22 months, work has been carried out at the CEE as the UK contribution to a NATO/CCMS project 'Training and Education in Relation to Environmental Problems' which has also included research in Spain and West Germany. Work in Britain has now been completed and a draft report presented to the Department of the Environment. At the time of writing, approval of the report is awaited after which wider circulation of the findings and recommendations can be made. Those who wish to know more details of this study should look at the full report when available: in the meantime a summary of some of the major findings is given here.

The main focus of the study has been on obtaining basic information about the types of environmental education activities that take place in a sample of institutions and organisations, and the nature of training that environmental educators have received. Also, information about the attitudes of the people from the selected samples to their environmental education experiences and their attitudes to a range of important environmental

issues and problems have been considered. A series of questionnaire instruments were developed specifically for the study and it is envisaged that these could form the basis for evaluation in subsequent studies in environmental education.

Samples of pupils for the investigation were selected from schools where it is known that there are organised programmes of environmental education, as well as from schools where the pupils have received no such programmes. Other parts of the sample included teachers from junior schools, secondary schools and youth leaders involved with environmental education or environmental improvement work. Also samples were selected from among students in higher education, either on courses which include an element of environmental education or on courses which donot.

The incidence and emphasis of environmental education courses

A total of 1000 people were asked to respond to a detailed questionnaire which produced an overall and satisfactory response rate of 74 per cent. Replies were received from all the major regions of England, Wales and Northern Ireland, representing rural and urban areas. Scotland was not included in the survey.

From the large number of findings it was apparent that environmental educators are drawn from varied educational backgrounds and disciplines both in the formal and non-formal sector. It was also clear that a considerable number, making up the majority of that part of the sample, had not been on a course specifically about the environment and even fewer had been on courses dealing with methods and techniques in environmental education. The situation relating to post-experience courses was particularly unsatisfactory in the case of people working with children of junior school age. Here, 11 per cent had been on such courses compared with 19 per cent of those who were working in the secondary area. This result seems particularly disappointing considering that young children especially are likely to be receptive to environmental education, and that many educators see this aspect of their education as part of a continuing process beginning in the early years of childhood.

Teaching methods used by teachers are frequently of a didactic nature and interactive methods which are more likely to affect attitudes are used rather infrequently

Among the whole range of those who had attended training courses in environmental education it was found that frequently there is more emphasis within the courses on presenting information, particularly about the rural or natural environment rather than on considering methodologies and approaches. From these results, it seems to be important that a range of environmental education courses are made available including long courses, particularly at the pre-service stage but also for post-experience purposes. Short courses on particular specialist areas are also valuable and voluntary organisations have a useful contribution to make to this whole area of training.

Over 80 per cent of the school pupils receiving formal environmental education thought that of the different types of activity they undertook in the subject, work outside in the environment should form an important part of their course. But there was disappointment expressed over the actual amount of time spent outside. It appears that most of the time spent in the environment involved observing, describing, recording, identifying and developing other lower order abilities rather than analytical and problem-solving skills. Less than 25 per cent of the pupils felt that they had had experience in higher order aspects. The number of teachers who felt that they had received any proper training in these aspects was less than 10 per cent. Information obtained from this study also indicated that the teaching methods used by teachers are frequently of a didactic nature and that interactive methods which are more likely to affect attitudes are used rather infrequently.

Another aspect of environmental education courses that was surveyed was the consideration given to ways of becoming actively involved in environmental improvement. Only 5 per cent of school pupils and 12 per cent of teachers and youth leaders who had experienced environmental education said this was an important component of their course. None of the pupils felt that aspects of decision-making in relation to environmental problems had been covered in their courses, and only 2 per cent of the teachers stated that this element had been included in their training.

Most of the youth workers involved in the survey had actually taken part in practical projects or schemes designed to bring about environmental improvement and a detailed list of projects has been compiled as part of the findings of this study. Participation in competitions and other similar activities were among the experiences frequently reported by respondents; at the same time it was apparent that most of these activities remain very much at a local level and do not relate to wider environmental issues. Also the provision of appropriate follow-up activities to sustain interest appears to be uncommon.

The school children in the survey who were receiving formal courses in environmental education stated that their main source of information about environmental issues and problems was through school (71 per cent) while television was cited by 20 per cent. Of the children not receiving a planned programme of environmental education in school, 84 per cent cited television as their major source of information and only 6 per cent cited school. This seems to indicate that where schools do not provide a planned explicit programme of environmental education, pupils tend to be much less aware of any environmental input from their school, even though it is likely to be present within traditional subjects or as an aspect of the hidden curriculum.

Among teachers and youth leaders, television was clearly seen as an important source of information, (72 per cent primary teachers, 76 per cent secondary teachers, 45 per cent youth leaders with 41, 38 and 24 per cent respectively citing it as their primary source). However, many of the people in the sample had a particular interest in the subject and also they seemed to relate to a circle of friends or associates who provided them with information. Conservation, naturalist and other environmental groups were given as important sources of information for the well-motivated minority. Books and magazines were also cited as important sources of information.

Attitudes on environmental issues

The attitudes of all of those in the survey was obtained on the following 11 environmental issues.

- Population
- Litter
- Acid rain
- The use of products made from rare wild animals
- Nuclear power
- Deforestation
- Housing and town planning
- Inner city decay
- Mineral resources
- Recycling
- Protection of the natural environment

A series of multiple choice items was constructed for this part of the survey. This approach facilitated subsequent modification and analysis. Since the concern was with attitudes rather than knowledge, care was taken to use methods which did not give the impression that there is a 'right' or 'wrong' answer.

Nuclear power and population were considered by all groups in the survey to be the most urgent environmental issues at an international level. Nuclear power, inner city problems and protection of the natural environment were those selected as most important nationally. In terms of attitudes to the solution of the problems, for most of the issues the majority of the respondents gave answers which conformed to those of a panel of 30 people experienced in environmental education. Notable and important exceptions were acid rain, nuclear power, the use of mineral resources and recycling. For these a broad range of options were chosen; there being particularly marked differences in the attitudes of those who had received some environmental education compared with those who had not. From among those respondents who had received no formal environmental education, there was a statistically significant greater number of people who expressed little direct personal concern or responsibility for the environment compared to other groups. Also among those who had not received any formal environmental education there were more people who considered that certain other issues were more important than environmental ones. Among this group overall, it was apparent that the interrelation between environmental issues and international issues was not appreciated.

Where attitudes to specific environmental issues were investigated it was apparent that those who had received some environmental education more frequently expressed views which would generally be considered to be 'environmentally responsible'. This was especially the case with issues such as population, litter in the street, acid rain, the use of products made from rare wild animals, housing and town planning, inner city decay, water pollution, mineral resources, and the protection of the natural environment; but not so clearly the case with nuclear power, deforestation and recycling. The issue of nuclear power drew the most varied responses from all groups in the survey; but at the same time this was seen as a very important issue both nationally and internationally.

In many cases, particularly among those who had received no formal environmental education, economic arguments were considered to override environmental ones. These arguments often related to industrial efficiency, the cost of natural resources and other economic aspects.

Some tentative investigations were also made into the types of personal behaviour that people might show in relation to the environment. Here there were significant increases in the amount of environmentally responsible behaviour that people adopted, or claimed that they adopted, among groups that had received some environmental education compared with those who had not. However, it was also clear from many comments made by respondents that more public awareness material is required relating to the ways in which people can behave in an environmentally responsible way.

This study has indicated directions for further work which would be fruitful, particularly if conducted over an extended period. An additional important aspect of this study has been the development of the methodology used which included a variety of methods for assessing attitudes to environmental issues. Some of these approaches had the useful outcome of raising awareness amongst respondents and also could be used to provide the basis for subsequent evaluation of environmental education courses. ■

Provision for environmental education in rural areas

A research project undertaken in 1986 for the Nature Conservancy Council (NCC) looked into the provision for and problems of environmental education in rural areas. This article, which was compiled by the editor from material supplied by the NCC from the draft report, gives an outline of the scope of the project.

It could be argued that environmental education in rural areas has become - by virtue of the considerable and much needed input of resources into urban areas the last few years - rather the poor relation of its city sibling. Many rural pupils are assumed to understand the countryside in which they live, but often this is not so. Recognising this situation, the Nature Conservancy Council commissioned a research project to 'look at the current provision for environmental education in the rural local education authorities and to make recommendations as to its improvement'. This was carried out in 36 rural LEA's (20 in England, 12 in Scotland, and 4 in Wales) in 1986 by Pam Desmond, an advisory teacher from Northamptonshire, using questionnaire and interview techniques.

The objectives were to:

1 look at current environmental education provision in all rural counties nationwide, both rural and semi-rural;

2 review past practice;

3 find good examples of good practice at all levels 5-13;

4 look for special provision in the 9-13 age range;

5 look at teacher training and in-service training with regard to the rural environment.

A draft report was submitted to the NCC in May 1987. The report focused on ten issues and these are briefly summarised below. As the final report is still in preparation, recommendations are not included here.

1 The Role of advisers/ inspectors

Environmental education is widely accepted as cross-curricular, but it has been shown that where an LEA considers it to be part of the brief of all advisers, it is difficult to establish continuity and acceptable standards of work, not least because advisors already have a full work load. Similarly, advisers with multiple roles cannot function equally effectively towards them all.

2 Curriculum guidelines

In many LEA's, environmental education is left to chance. This unsatisfactory situation could be greatly helped by the inclusion of environmental education in curriculum guidelines issued by each LEA.

3 In-Service education

As some rural teachers can live

as many as 30 miles from the nearest Teachers' or Resource Centre, they tend to work in isolation. In-service work in environmental education is therefore as important to rural as to urban teachers, not only because teachers who have few day-to-day colleagues need the opportunity to exchange views, but because it helps them to widen the scope of children in caring for the environment beyond the village and agricultural community. In-service environmental education courses could be based locally at a school or field centre.

4 Fieldwork
Beyond the use of school grounds, the residential fieldwork experience can extend environmental awareness and understanding, and increase children's social confidence. However, the high cost of taking groups of children on residential school journeys to private field centres, hotels, or even Youth Hostels means that children from low income families are often unable to afford them. The provision of transport as well as of LEA field centres are vital factors in making residential experience available.

5 Field centre staffing
Field centres, whether in or out-county, should provide more than just a building, and be staffed by wardens experienced in both classroom and fieldwork teaching who can provide a support service to staff. Resident staff can make a vast difference to the success of residential fieldwork, but some field centre staff work in isolation, having no contact with teachers and children other than during the visits of schools to their centres.

6 Fieldwork alternatives
One way of combatting the cost of distant fieldwork would be to copy a scheme initiated in North Yorkshire whereby rural schools act as a visitor centre for visiting schools from Friday morning to Sunday afternoon. This can work equally well with both rural/rural and urban/rural exchanges, and allow children to explore new environments at minimal costs to the authorities involved.

7 Professional support for teachers in rural schools
Unlike their urban counterparts, teachers in rural areas are not able to meet each other easily to discuss matters of interest. Environmental liaison groups based on rural catchment areas, and involving both primary and secondary teachers can help alleviate this situation. Such groups encourage pooling of resources and expertise, provide the opportunity to discuss curriculum developments and plan combined school activities. They can also provide a valuable information service on local resources. Local groups' representatives can meet periodically with the LEA Environmental Advisory Team to evaluate progress, exchange information and discuss LEA initiatives.

8 Cooperation between schools, parents, and local and national environmental organisations
In the few authorities where regular dialogue takes place between local environmental organisations and education staff at all levels of responsibility, teachers were better informed. Many teachers instigate their own links with outside organisations, but more opportunities for wider liaison need to be made available for all teachers. Many teachers also use the expertise offered by parents and other adults in the community, but to many more it remains an untapped resource.

9 Teaching material produced by non-LEA groups
There are insufficient environmental education materials aimed at primary schools, and consequently teachers are forced to adapt materials intended for secondary schools. Small rural schools where capitation is low find materials expensive. Environmental organisations, and especially MSC funded groups, need to liaise with advisers and teachers to ensure the material is suited to needs.

10 Initial teacher training
The key to school commitment to environmental education lies with the teachers, and this highlights the vital role of teacher education. However, only two Colleges of Education offer initial teacher training in environmental education, and only another eight include it as an element of a multidisciplinary course. Clearly, this provision is inadequate if environmental education is to flourish.

A fuller report for each county is being prepared by the NCC. It is hoped that the report will be of value to both LEA's and environmental organisations in identifying opportunities for establishing an environmental education approach in rural primary and middle schools. ■

Environmental education, 11-18

What is the current status of environmental education in secondary schools compared to fourteen years ago? Peter Berry compares the results of national surveys carried out by the Conservation Trust in 1973 and 1987.

Peter Berry
Director of the Conservation Trust

The first survey

The Conservation Trust was created in 1970 to encourage greater awareness and concern for the environment amongst people of all ages. In practice, for most of the first 17 years of its existence, the Trust has concentrated its efforts on the formal education system.

The writer joined the Trust in 1973 (and became its honorary Director two years later). One of the first tasks he undertook was to coordinate a national survey into environmental education in secondary schools. The resulting report and recommendations was published the following year [1] The main points made at the time were as follows:

1 The majority of the schools surveyed (61 per cent-88 per cent, depending on topic) claimed to be discussing aspects of the environmental crisis, but few (25 per cent) had established definite syllabuses on the subject, and even fewer (22 per cent) regarded the work as examinable.

2 Work on environmental matters involved a wide range of school subjects (but especially geography and biology), particularly with older pupils. Often, however, the work was restricted to those of average or below average ability. Most (76 per cent) schools undertook some form of practical or fieldwork with an environmental bias, although insufficient use seemed to be made of the local environment.

3 The main problems encountered by schools in connection with environmental education were timetable difficulties, lack of suitably qualified staff, lack of suitable teaching aids, and the status of the subject in

relation to more traditional disciplines.

4 The report concluded that it was essential that all pupils be presented with a balanced study of all aspects of man's interrelationship with his environment. It also considered the three routes by which this could be achieved (ie by the introduction of *specialist syllabuses* such as Environmental Studies/Science syllabuses; through *integrated studies* in areas such as Humanities; or by the *modification of existing 'traditional' courses* such as Geography and Biology), and concluded that the method of achieving 'environmental awareness' was not itself critical. In fact, the modifications of examination syllabuses that have taken place in recent years particularly in connection with GCSE, have done much to include a consideration of environmental topics in many areas of the school curriculum.

Since the original report several follow-up surveys have been conducted, and much of the Trust's work has been based on these findings.

The 1987 survey

In 1987 a major new survey was carried out on the Trust's behalf by Hermien Busschbach, a research student from Rijksakademie Nieuw Rollecate in the Netherlands. Ten per cent of all secondary schools in England and Wales were approached, of which rather more than a third responded. The final report[2] was thus based on the replies of some 3.7 per cent of all secondary schools.

A large proportion (80 per cent) of schools wanted additional help for teaching environmental topics

The new survey suggests that there have been a number of changes in the situation of environmental education during the 14 years that have elapsed since the original investigation.

Only 4 per cent of the schools responding to the new survey do *not* claim to undertake any environmental education at all - 80 per cent undertake it as an integral part of the course, 18 per cent as a non-examinable course, and 28 per cent as a subject leading to an examination (mainly GCSE).

Geography and biology remain the subjects most likely to include environmental elements, with science as a fairly close third. Other subjects mentioned quite frequently included history, social studies and rural studies.

Unlike the earlier survey, environmental work now seems to be more evenly spread through the age ranges - 60 per cent of schools claimed to be involving 11-13 year olds, 66 per cent 13-15 year olds, and 50 per cent 15-18 year olds. There has apparently been a considerable increase in the work in the earlier years of secondary education.

A large proportion (80 per cent) of schools wanted additional help for teaching environmental topics. The particular types of help suggested will be of great assistance to the Trust in planning its future educational publications and teaching aids. Of the main environmental topics listed in the questionnaire, 88 per cent wanted help on pollution, and 76 per cent on ecosystems and the effects of human interference. Other topics like recycling, recreation and leisure, urban environment, population movement and agriculture recorded figures of between 52 and 43 per cent.

The majority (62 per cent) of schools preferred to buy their teaching material, while 41 per cent asked for free loans (possibly on annual subscription), especially of more expensive items. Few (12 per cent) wanted to hire items.

Seventy-eight per cent of all the schools surveyed reported approaching national voluntary and statutory organisations for help on environmental topics. Two large statutory bodies (Forestry Commission and Nature Conservancy Council) had each been approached by 40 per cent of the schools. Other percentages recorded were World Wildlife Fund 32, Countryside Commission 31, Friends of the Earth 27, Conservation Trust 24, Council for Environmental Education 22. Smaller figures were recorded for RSPB, BTCV, CEGB, and WATCH.

The problems encountered by schools in the field of environmental education were depressingly familiar - too little money, too little time for field study, too little time as part of subject, difficult to find information, level of material unsuitable. However there was really nothing to indicate that these problems were any different for environmental education than for any other school subject.

From comments received, two areas of concern that are more closely related to environmental education than other subjects were:

1 The recognition of environmental education, eg:

'Making it a subject in its own multi-disciplinary role, not a mix of parent subject disciplines';

'More money for environmental education';

'Convince heads of schools of the importance of this area';

'Making it a higher status rather than a fill-in for low ability';

'Pressure on LEA/inspectors for inclusion in school curriculum (as an exam subject)';

'...it is regarded as a minority subject and there is little interest by head teachers and pupils' (Busschbach).

2 Information required for environmental education, eg:

'Information about organisations to find an expert on a certain topic';

'Speakers that visit schools';

'More publicity about what is available';

'National resource bank to which all organisations can contribute and where teachers can go for information';

'Information on new materials sent to schools'.

One suggestion made in connection with (1) was that perhaps organisations concentrated too much on producing material rather than on trying to make teachers, heads of schools, and LEA's aware of the importance of environmental education. The CEE clearly still has more to do in promoting this important field!

Other suggestions included putting pressure on LEA's or inspectors to include environmental education in the school curriculum, convincing heads of the importance of this area, and enlarging field study possiblities. 'Sometimes these remarks were almost desperate!!' (Busschbach).

As far as (2) is concerned there is a need for speakers and experts on certain topics to give talks in schools, and for an information system which could store and co-ordinate information about what is available.

Although evidence from the Trust's monitoring of the growing number of enquiries received from both teachers and pupils suggests a substantial increase in interest in environmental subjects, the conclusion that the status of environmental education still needs enhancing is no doubt accurate. It is regrettable therefore that the recent DES consultation document on the national curriculum[3] appears to have made little or no provision for environmental education.

Implications for the Conservation Trust

The Trust has always placed great emphasis on the provision of the types of information sought by teachers and pupils. The first edition of its *Guide to Resources in Environmental Education* (containing details of teaching materials available on environmental subjects) was published as a direct result of the initial findings of the original survey. New

editions have been published at approximately yearly intervals since then - the latest (10th edition) in 1986[4]. The Trust's *Environmental Education Enquiries*, originally published in co-operation with CEE, and giving details of the type of help available from statutory and voluntary organisations, reached its 4th edition in 1985[5].

In 1976 the Trust received a grant from the EEC Commission to set up a resource bank of teaching and reference material on environmental subjects. This has grown very substantially in recent years, and is probably the largest of its kind in the UK. In addition to holding a wide range of current books and other teaching materials, it also now represents a valuable archive of background information. To this is being added a growing computerised database of bibliographic, factual and statistical information, which will be made available for external access by schools, libraries, etc equipped with suitable modems in the near future. It should also be possible to link this in with CEE's own database to provide an even more comprehensive service.

The Trust has undertaken a comprehensive reappraisal[6] of its functions and services in the light of its recent growth and the survey findings. This will result in the strengthening of its information services both to schools and the general public, in greater efforts to promote its information service and Resource Bank of teaching aids, in consolidating and enlarging its range of publications, and in careful evaluation of new educational materials planned for the future. These last are likely to include a completely new edition of the Trust's *Guide to Resources in Environmental Education*, a *Who's Who in the Environment*, new GCSE study packs, two series of copyright-free Topic Cards and a number of new AV programmes.

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Environmental education and training in industry

How widespread is environmental education in industry? Shireen Mathrani reports on a two-year research project which was carried out at CEE. Overall, the findings were disappointing, but in some industries a start has been made and an interest expressed.

Shireen Mathrani

Research Officer for this project

Training provision of any kind within UK industry is somewhat limited, despite clear evidence that training and economic success are strongly related[1, 2].

One aspect of industrial training that has been particularly neglected is environmental training, as emphasised by two reports for the European Commission[1, 4]. These studies, which were concerned with training for pollution control and for environmental impact assessment in industry, found that relevant training provision was severely inadequate.

In this context, the CEE set out on a two-year research project, funded by the Department of the Environment, in March 1985. The study investigated the nature, extent and effectiveness of environmental education and training within industry in England and Wales, and suggested ways in which it could be improved.

The concept of environmental education and training was defined very broadly for the purposes of this study. It included education for an understanding of a company's environmental effects and training in the skills needed to control such effects, as well as education for a general awareness of current environmental issues and an understanding of the environmentalist philosophy on issues like resource sustainability.

Both formal and informal training methods were investigated. Included among the former were in-house training, external short courses and distance learning, while the latter consisted of methods such as on-the-job experience, films, talks, seminars, conferences and educational campaigns.

The first phase of the research involved a postal questionnaire survey of management from 455 randomly chosen companies in a very wide range of industrial sectors. These sectors were chosen so that diverse impacts on the environment would be covered. They included extractive industries, such as forestry, energy and minerals; manufacturing industries, such as packaging, chemicals, food and drink; and service industries, such as garages, cleaning and film processing. A 40 per cent response rate to the questionnaire was achieved.

Having established a general overview, the second phase of the research went on to examine 20 of the respondent companies in greater depth. Seventy detailed interviews were conducted with staff at all levels, ranging from managing director to operator.

As the study progressed, it became clear that company practice in terms of the environmental training actually provided did not match up to the interest claimed by company managers in environmental matters. Nearly all the respondents felt that environmental training was highly relevant to industry and half of those interviewed indicated that they would personally be interested in undertaking it. Furthermore, over a third of respondents said that they had already taken part in some formal or informal training of this kind.

However, the respondents' knowledge of topical environmental information and awareness of environmental initiatives relating to industry was very poor, even though they were at a high level of seniority - most were managing directors, chairmen or directors of some kind. For example, less than 10 per cent of the 180 respondents had heard of the Pollution Abate-

ment Technology Award Scheme and only 17 per cent had heard of the World Conservation Strategy.

On a personal level, the study participants seemed to have socially responsible attitudes to the environment. At the company level, consideration of environmental matters was primarily motivated by legislative controls and by the need to have a good public image. 'Environment' was perceived as a fringe activity, along with 'Training' and 'Safety' and was rarely seen as an integral part of the company's decision making structure.

Another example of the gap between professional interest and actual practice came from an investigation of written company policies. 28 per cent of the companies that responded said they had an education and training policy which referred to environmental matters, and 12 per cent claimed to have specific environmental policies. In actual fact, many of these companies had little more than a code of practice, a memorandum or a health and safety policy of little relevance to the external environment. Furthermore, most of the policies which did exist consisted of general statements from a parent company rather than specific policies tailored to the needs of individual companies within a group. Such policies rarely influenced the provision of environmental education and training, or the initiation of good environmental practice.

The provision of environmental training

Going on to the level of provision of environmental training, this too seemed encouraging at first glance, but had many shortcomings when looked at in more depth. Forty-four per cent of the respondents said their companies provided some formal environmental training, and 66 per cent some informal environmental training, generally for senior rather than junior staff levels. Pollution control and energy conservation were the most common subject areas, followed by efficient use of materials, environmental appraisal of projects and land restoration.

Employees must be motivated through good management practice and skills, to use the information gained from environmental education and training in an effective way

However, formal environmental training was irregularly provided and only undertaken by a few employees. It was often a very minor part of a company's training provision and rather 'ad hoc' in nature. Companies rarely used formalised procedures for course attendance. Moreover, instructors were very commonly employed full-time in other posts and often lacked relevant training themselves.

Informal environmental training was undertaken by more personnel within a company than was the formal training, but in no case did the majority of staff participate in it. Content and amount were very variable and provision was uncoordinated. Thus, neither formal nor informal environmental training were considered important aspects of training in industry, while training itself was a low priority.

Even though the actual provision of environmental training was rather limited, most of those interviewed felt that whatever they had received had been worthwhile. In t... most successful cases, changes in company practice had occurred. For example, a packing manufacturer had decided to build a solvent recovery plant as a direct result of a training course. In another case, a chemical company had solved a water pollution problem by effectively training personnel in environmental monitoring.

The study found that if environmental training was to be effective, a highly motivated workforce was needed. Factors that led to such motivation were the personal commitment and enthusiasm of company personnel, pressure from supervisory staff and the involvement and support of senior management. Thus, employees must be motivated through good management practice and skills, to use the information gained from environmental education and training in an effective way.

Recommendations

Extensive and varied recommendations based on the findings of the study have been prepared separately, at the request of the Department of the Environment. In an effort to be comprehensive, these are addressed to companies themselves, to providers of environmental training, to industry and to government.

Companies are urged to incorporate environmental training into their written company policies on training or the environment, and to include environmental matters in their existing in-house training provision. It is suggested that health and safety training provision could be used as a guide for setting up environmental training schemes. Management is urged to make environmental training more effective by motivating and encouraging employees, and by ensuring that the environmental knowledge and understanding of company trainers themselves is adequate.

It is recommended that bodies providing environmental training should coordinate and publicise existing provision more effectively. They are urged to develop their links with local industry and take its needs into account with regard to course duration, cost, timing and topics. (It was found that courses dealing with environmental legislation would be particularly welcomed.) It is also suggested that environmental training should be integrated more fully into schemes such as the Open Tech Programme, the PICKUP Programme and Teaching Company Schemes.

At industry level, the CBI, the TUC, industrial associations and trade federations are urged to issue policy statements on environmental training. The TUC National Education Centre could be used to provide environmental courses for industrial personnel. It is also felt that industry, along with central government, or the EEC, should fund advisers to visit companies and encourage relevant environmental training provision.

The recommendations addressed to government relate mainly to environmental legislation and to the provision of funding and incentives for environmental training.

CEE is publishing all the recommendations[5] arising from the study under separate cover, unendorsed by the Department of the Environment.

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GCSE and environmental education

Are the GCSE syllabuses 'good news' for environmental education? John Baines gives a qualified 'yes', based on the research CEE has carried out on the environmental education content of almost 300 syllabuses.

John Baines
Director of CEE

EXAMINE is a database held on CEE's computer. It was set up in 1986 to record the environmental content of examination syllabuses at CSE, 'O', 'AO' and 'A' levels. In 1987, it was extended to include the new GCSE syllabuses. Although brief descriptions of the database have been published[1] its main purpose is as a research tool for those developing environmental education materials for school examination syllabuses. The database can be used by visitors to CEE's office in Reading, and for others, a 'print out' service to suit customer's requirements is available for a small fee - further details are available from the CEE Information Officer. The database was created with the financial assistance of the National Trust, the Royal Town Planning Institute and the World Wildlife Fund. The research was undertaken by Meryl Beek.

Background

When the GCSE was first mooted, CEE offered to comment on the national criteria being prepared for all subject areas. The intention was to encourage consideration of opportunities provided in all subject areas for environmental education. As more and more paper accumulated at CEE, it became apparent that there were insufficient resources to make useful comments on all the subjects. A decision was then taken to prepare and submit more general comments that were relevant to all subjects. Once the actual syllabuses were available, research into environmental education content would be done and the data entered onto the CEE's computer database EXAMINE which already contained information on current CSE, 'O', 'AO' and 'A' level syllabuses. The purposes of the project were:

1 To provide a resource that could be used by researchers to find out the environmental content of the new examinations, and especially how they compared with the previous examination syllabuses;

2 To provide a service for those wishing to develop environmental education materials suitable for use in a range of subject areas in the new exam

The analysis

The same record card as the original research was used to analyse each syllabus. This had proved to be very successful over two years and its use had the added advantage of enabling direct comparisons between the old and new syllabuses. Once complete, the information on the card is transferred to the database. A standard record card is shown in Fig 1. Environmental themes covered in the syllabuses are divided into ten categories, based on those which were used by the Schools Council's *Project Environment*. The amount of coverage in the syllabus of each category is subjectively assessed (using the scale from A = a little to D = a lot) and an entry made in the appropriate column. The most difficult categories to assess were 'Environmental Quality' and 'Environmental Ethics'. The purpose of including these categories was to see if students were required to make value judgements about the environment.

Environmental education also advocates the use of certain teaching approaches and these are placed into four categories; undertaking practical studies in the environment; considering and handling environmental issues; attempting to solve real or simulated environmental problems and including opportunities for students to undertake their own investigations. The criteria adopted by GCSE are very supportive of these kinds of approaches.

As one would expect, the environmental and rural studies type courses met the criteria of good environmental education most completely

The environmental themes and educational methods represented on the record card are very generalised and to allow more detailed searches of the database, keywords from the CEE's 'Thesaurus of Terms'[2] were allocated to each syllabus. This makes it possible, for example, to identify syllabuses that mention particular types of pollution, eg air, water or noise, or that refer to particular habitats. The latter proved very useful to the Nature Conservancy Council when they were considering developing teaching materials on nature conservation. Choosing those habitats that most frequently appeared in syllabuses meant that they could cater for a larger target group.

Finally, an abstract is entered which describes the syllabus and in some cases, gives the researcher's views on it.

Some comments

For some subject headings, there are National Criteria themes that include environment. For example, biology includes 'Relationships between organisms and the environment'. In some subjects, like craft, design and technology (CDT), there are aims common to all the examination boards. This is a good development as it corrects the variation in the amount of detail in syllabuses which was faulted in the original research in 1986. However, the common aims and themes do not necessarily produce syllabuses of equal environmental education merit. For example, one physics syllabus includes among the aims 'to promote awareness and understanding of the environmental implications' but nothing about the environment appears in the syllabus.

Fieldwork is accepted by all as being a valuable part of a child's education and it is a key feature of environmental education. It was very disappointing to find that the call for fieldwork does not come over strongly at all, even in the geography and biology syllabuses.

As one would expect, the environmental and rural studies type courses met the criteria of good environmental education most completely. However, one must bear in mind that these are taken by only a small proportion of candidates. In fact, according to research commissioned by

the World Wildlife Fund[1], the majority of school students obtain their environmental information from geography lessons. There is also the worry that these courses may not survive the introduction of the National Curriculum.

The geography syllabuses appear to show the most modernisation and are very much orientated towards global and environmental topics and issues. Geography is also one of the foundation subjects of the National Curriculum and environmental educationalists might see this as the key subject through which environmental education is developed. That is not to say that we should diminish our efforts to build on the environmental content within other syllabuses, in particular the science subjects.

Conclusion

In general the GCSE syllabuses are good news for environmental education. Many more syllabuses than before refer to the environment and environmental issues and there is also strong support for the learning methods required by environmental education. It is up to those working in environmental education to ensure that there are suitable materials and adequate support for teachers to maximise on the potential. There is a cloud on the horizon in the form of the proposals for the National Curriculum[4] because it has already been stated that there may need to be alterations to the CGSE exams to take account of its requirements. CEE will be making representations to the Subject Working groups to show the benefits of including environmental education. Meanwhile, we hope that this research will contribute to the successful introduction of the new syllabuses by helping to identify the needs for teacher training and materials.

References

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[2] B James, *CEE Information System for Environmental Education*: 2nd edition ,CEE, 1986.

[3] *Children's attitudes to the Environment*, WWF/MORI, 1986.

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Examination Syllabuses — Index Sheet

Title of exam eg Geography				Level eg 'O'	
Faculty eg Science Art, Humanities					
Exam Board					
Environmental themes	A	B	C	D	(A=little, D=lot)
Population					
Urbanisation					
Food & agriculture					
Land use and Planning					
Water					
Pollution					
Conservation					
Human use of resources					
Environmental quality					
Environmental ethics					
EE methods					
Outdoor work					
Environmental issues					
Problem solving					
Pupil enquiry					
Env. component optional, compulsory, or encouraged					
total syllabus environmental					
Keywords					
Abstract (other comments if needed)					

Figure 1. Example of database record card

European Year of the Environment - An EYE 'EIA'

Ewan McLeish attempts an 'Educational Impact Assessment' of European Year of the Environment (EYE).

Dr Ewan McLeish
Head of the Formal Education Unit at CEE

The take-up of the Year

In October I attended, along with a couple of hundred very committed teachers and some more familiar (but no less committed) colleagues from 'the field', the Centre for Study of Comprehesive Schools (CSCS) conference 'Environmental Issues in the Secondary School '. The conference - sponsored by Esso to bring it within the range of most individuals' (and local authorities') pockets - was an undoubted success. Only slightly less certain was the 'EYE factor'; would CSCS have organised, and Esso sponsored, the event if 1987 had not been designated European Year of the Environment? Perhaps, but the Year must have been a powerful persuading factor.

A week later I was giving a presentation at a Warwickshire County Council conference entitled 'Environmental Perspectives '. Organised by the Planning and Transportation department, and bringing together different departments throughout the county, the event was undoubtedly a direct response to the Year.

A few weeks before this I spoke at a teachers' workshop in Colchester to prepare for the launch of the Colchester Festival of the Natural World, in March 1988. Again it was hard to believe that this event, based on the idea of participation by young people in all stages of its planning and operation, was not a direct result of the stimulus given by the creation of a European Year of the Environment.

Perhaps, less than nine months into the Year (21 March 1987 to 20 March 1988) it is too early to start assessing the success (however you define it) of EYE. It is all too easy to fall into the trap of making a superficial evaluation based on the - admittedly enthusiastic - response of many organisations, educational establishments, industries and individuals. For the response has been truly impressive. A glance at EYE's own monthly newsheet *EYE News* reveals an array of activities ranging from Liverpool's 'EYE on Merseyside' campaign[1] to Anglian Water's joint EYE initiative with Beds and Hunts Wildlife Trust to conserve endangered dragonflies[2]. The diary of events in the centrefold each month reads like an environmental gazeteer's dream - National Environmental Workshops in Sunderland one day, on 'Industry; Caring for the Environment' exhibition on Brighton Station, the next .

An obvious question is 'Would these events have happened anyway?'. An equally obvious response might be 'Does it really matter?' The fact that they are happening, and that the Year is a good way of focusing attention on a host of activities that would not normally get more than local recognition, might be considered sufficient justification in itself. Undoubtedly many activities do fall into this category; undoubtedly just as many (and probably more) have been genuinely stimulated by the call of the European Communities to create a year in which people can reaffirm and restate a commitment to a conservation ideal.

But is it good education?

From an educational point of view, the Year is even more difficult to assess. While it is relatively easy to measure 'success' in terms of projects on the ground, or the number of people involved (but in what way involved?), the educational analysis demands something more. If the aims of the Year are a guide - conservation of natural resources, reducing pollution and waste, improvement of inner cities - then any educational initiatives stemming from the Year should go at least some way to realising these goals. CEE's own major yearly conference and AGM in October took on the latter theme under the title 'Encouraging positive attitudes towards the urban environment'.

Other education projects specifically matching the EYE aims are not hard to find. At the time of writing 'Recycling Week' is about to be launched. What is particularly noteworthy about the event is that it represents a partnership between Friends of the Earth and, less predictably, the National Council for Voluntary Organisations. Judging by the flood of mail coming into the CEE office alone, the event will be well supported. What is perhaps slightly less encouraging is the number of school classes who have been instructed, or at least allowed, to write in 'en masse'. The educational aims of recycling and using resources carefully may be slightly muted when 30 bits of paper are used instead of one! The lesson time and time again must be to judge our everyday actions against our ideals. The National Aluminium Recycling Can-Paign (EYE has also been notable for a plethora of weak puns) organised by the Conservation Foundation has undoubtedly also attracted great interest in schools. The hope, of course, is that the aims behind the campaign are made clear and that, through it, young people become more aware of the concept (if not the terminology) of non-renewable resources and sustainable development, and not merely of a competition to collect the most cans! WATCH'S 'Acid Drops' project is a superb example of a national project which combines an experimental approach, local relevance, handling controversial issues,

statistical analysis, meteorology and practically any other area of learning that an enterprising school (or youth group) wishes to draw on.

This perhaps is the key. From a schools' point of view at least, EYE should be a stimulus to develop new cross-disciplinary material and ideas - ideas that are part of true curriculum development and not 'one-offs' tacked on at the end of the biology lesson or general studies. Examples of such work are now numerous - some are described in another of CEE's initiatives stimulated (and partly sponsored) by European Year of the Environment; a teachers' pack reaching (almost) every school in the UK[3]. One such example is provided by the Keep Britain Tidy Group (KBTG). KBTG has long been admired for well-researched and tested material produced in association with practitioners. Their scheme, in association with the French Ministries of Environment and Agriculture and involving the integration of environmental study into language exchanges between French and British pupils, (latterly from Avon) is no exception. A project which leads to improved international understanding and co-operation, language learning, and increased awareness of environmental issues[4] has to be taken seriously at a time when the truly cross-boundary nature of environmental problems (and their solutions) is becoming apparent.

Of course, not all initiatives stem from organisations .The role of teachers as individuals, in small groups, in professional associations, or voluntary networks, is absolutely central. Valley Park School in Wolverhampton is a good example. Environmental awareness has been built up gradually from existing good practice. Faculties and departments identified contributions to environmental education in their schemes of work and these were then gradually assimilated and built up into a cross-curricular programme. The success of this approach depends on a high level of co-ordination and co-operation by all members of staff - and a commitment to the central idea. Approaches adopted elsewhere may differ - a single teacher, for example, creating a focus of interest that gradually expands - but the level of commitment and enthusiasm is the same.

Other initiatives

Valley Park School has special associations with CEE because it also hosted the launch of CEE's teachers' pack mentioned earlier[1]. This took place in July during the school's own ambitious EYE programme of events. The Pack was the realisation of CEE's ambition to get a booklet about environmental education into every school in the country. EYE allowed that ambition to be fulfilled and, in doing so, facilitated a major part of CEE's programme. This was only achieved through the co-operation of well over a hundred local education authorities throughout the UK who distributed the Pack containing the booklet *Educating for Life*, and other other supporting material, including one of a series of newspapers highlighting the educational aims and initiatives of the Year. It was truly a national project, involving cooperation with CEE's Scottish counterpart the Scottish Environmental Education Committee (SEEC), the Prince of Wales Committee and the Ulster Trust for Nature Conservation.

Perhaps even more significantly, local authorities were asked to contribute their own material to the pack, drawing on local organisations and experience from within and outside the teaching profession. The majority have done so willingly and excellently - producing policy statements, resource lists, contact sheets, teaching ideas and materials, and sometimes comprehensive information manuals. Often it has been accompanied by a letter or endorsement from the Chief Education Officer or Director. Undoubtedly, some of it would have happened anyway without EYE - but the Year has provided the focus and the stimulus; there can be no doubt about that.

Environmental education is a life-long process. A recent survey[5] has suggested that the influence of the media (particularly television) is second only to that of school in raising environmental awareness in children; for many adults it is by far the most potent source of information available. CEE's Media Forum, a cooperative venture involving CEE, BBC Education and the Education Department of the IBA, has attempted, over several years, to bring the environmental movement and broadcasters closer. In European Year of the Environment the Forum has staged a number of seminars and workshops in London and throughout the country, attracting sponsorship from both EYE and industry (IBM). The aim has been to create a better understanding of both the constraints and opportunities open to environmentalists and broadcasters in co-operative working. Television itself has responded well to EYE - two notable productions being BBC's 'Only One Earth' and Channel 4's 'Battle for the Planet.'

Perhaps one criterion of success should be the extent to which initiatives have actually increased understanding of the international dimension of many environmental issues

EYE also saw the culmination of much of the CEE Youth Unit's work in the establishment of two full-time field-workers in the Midlands (Staffordshire and Birmingham). Significantly, both workers are based within the statutory youth services in the two areas. As in schools, the emphasis is on environmental education as an integrated process, taken into the activities and concerns of young people . Again, it is no coincidence that in EYE, the voluntary youth sector should also take the theme of young people and the environment for its influential Parliamentary Youth Affairs Lobby, 'It's our environment too'.

Conclusion

This brief sketch of European Year of the Environment has attempted to show some of the implications and opportunities for education; how initiatives have been designed to meet the *specific objectives* of EYE, but also at the broader theme of *understanding interrelationships* and links, for the former are only achieved through the latter. It has stressed the importance of an integrated and coordinated approach - perhaps made more urgent by the proposals for a National Curriculum[6], (see separate article), another landmark in this European Year. And it has touched on the implications for, and initiatives of, other equally important areas of education such as the youth service and the media. But the difficulty of assessing the Year remains.

Perhaps one criterion of success should be the extent to which initiatives have actually increased understanding of the international dimension of many environmental issues. Keep Britain Tidy Group's project is a step towards this; but still it is often easier not to take that step out from the local project and set it in a wider context, or alternatively, consider the global problem without its local reverberations and relevance. Another criterion might be the extent to which the Year has changed - or been a vehicle for changing - attitudes. At least there is now a greater willingness to examine and discuss attitudes and values in many areas of education; and a move away from the utilitarian approach that something is only worth conserving when it benefits us[7]. There is also a real attempt to try and measure these

difficult areas, as shown by the number of polls and surveys carried out during the Year[5,6,7] Finally, any campaign (or 'Euroyear') is only as good as the (lasting) results that it achieves; the action - informed and responsible - that people take to maintain and improve their local and global surroundings. That remains to be seen. But the signs are encouraging.

References

[1] *EYE News:*, EYE UK Committee, August 1987

[2] *EYE News:* , EYE UK Committee, July 1987.

[3] *EYE On the Environment* July 1987, CEE/EYE Teachers' Pack.

[4] *Our Europe: environmental awareness and language development through school exchanges:* Keep Britain Tidy Group, 1985. See also C Mares and R Harris, *Schools Link International - interim report on the evaluation of pupils' attitudes,* Avon County Council and KBTG Schools Research Project, 1987.

[5] MORI Poll, carried out for WWF, 1987.

[6] *The National Curriculum 5-16* , Consultation document, Department of Education and Science and Welsh Office, 1987.

[7] M Palmer, *Believing in the Environment,* CEE, 1987. (Report of the EYE lecture given by Martin Palmer of the International Consultancy on Religion, Education and Culture).

[8] 'Global Impact Project', research carried out by the Centre for Global Education, 1987.*

[9] 'Training and education in relation to environmental problems', C G Gayford, CEE, NATO/CCMS, 1987, final report to be published.*

* *These research projects are described in the 'Research Reports section of this journal.* ■

Learning through Landscapes Project

The importance of the school grounds as an educational resource gained further recognition last year with the setting up of a major three-year research project. Eileen Adams reports on its progress.

Eileen Adams

Member of the Learning through Landscapes Project team

The school and its grounds should be a complete environment for learning which should stimulate the process of child development. The landscape in which the school stands is important and, at best, can provide a rich and stimulating resource and setting for education. Financial constraints and traditional management practices mean that many are, at worst, close-mown sterile windswept spaces or tarmac expanses making little contribution to the school curriculum or to the environment in general.

There is a growing interest in nature conservation which has led to many small scale environmental improvements in school grounds. Much more needs to be done to support current initiatives and widen the range of opportunities in all areas of the curriculum. Many of these initiatives are fragmented and of variable quality. There is clearly a need to pool experience nationwide and to establish criteria of best practice, but how can these be identified? What is the impact on children's learning? Can the school landscape enrich the wider environment? Can the community contribute to and benefit from improvements to school grounds?

In response to such issues as these, the Department of Education and Science, the Countryside Commission and a number of local authorities have launched a joint initiative called the *Learning through Landscapes Project*. This seeks to:

1 investigate the potential of school grounds as a resource for learning and teaching;

2 investigate design and management practices relating to school grounds;

3 report on the design, management and use of school grounds in relation to improving environmental quality and educational opportunity.

The Project Team has now completed the first year of the three year study. The first phase of the research was based on a series of interviews with experts in the fields of design, management and education.

Their views revealed a variety of experience and a range of perceptions. They described the opportunities they had for positive action and the constraints and problems they encountered in their work. The results of this study are documented in the Project's Working Paper No 1 [1]. Further opportunities for consultation will be provided by a series of expert seminars for in-depth analysis of key issues, which will form the basis of Working Paper No 3, to be made available in the spring of 1988.

Local authorities were asked about their policies and current practices in relation to the design, management and use of school grounds and provided much useful information and advice to help the Project start to build up a database of current initiatives. This will also include details of other projects and work of local groups active in school grounds developments. The Project Team is to make contact with others involved in related research and has started to compile a bibliography of relevant material.

One of the most important aspects of the research this year has been the programme of visits to schools. The aim of this part of the study was to observe and document examples of good practice. It was not a comprehensive or definitive study, as it was possible to include only twenty local authorities, with a few schools in each. However, it provided a snapshot of the current situation and showed up areas of growth and neglect. Many primary schools are very much involved in the creation of nature conservation areas, much influenced by primary science in-service courses. In some authorities, advisers have begun to run courses specifically on the use of school grounds. At secondary level, the grounds are very much the province of the physical education department and perhaps the biology teacher.

The aim of this particular part of the research was to identify the range of possible uses of school grounds as a resource for learning and teaching. In one school, pupils had been involved in an archaeological dig on the school site, revealing traces of an old ironworks, roads and the remains of the ramparts of a seventeenth century manor

house. At another school, pupils were involved in experiments with wind generators to provide electricity for their plant experiments in the greenhouse. Other secondary schools were involved in growing crops, developing tree nurseries and carrying out various experiments in the use of fertilizers. A number of schools kept bees and one school had developed a small commercial enterprise to market the products.

In primary schools, it was evident that all subjects could make use of the grounds as a basis for learning. However, science and maths-based studies seemed to be the most popular with teachers. Pupils have been involved in counting, measuring, estimating, quantifying everything within sight. But of course there are other means of learning from the school grounds. Play is a rich source of informal learning for children and will form part of the study, as it is an important aspect of a child's school experience. But play in school grounds might differ quite a lot from play in the back garden or play in the street or on the recreation ground. Reports on the school visits will be documented in Working Paper No 2 which will be available early in 1988.

However, before then it is planned to launch a newsletter series. This will provide a means of communication between the Project and others involved in similar concerns. It will enable people to keep in touch with the Project's work, provide a means of reporting on work in progress and offer an opportunity to extend the debate on important issues concerned with the design, management and use of school grounds. But more than that, it will be used as a research tool to elicit information and response, to engage a wider range of people in the work of the Project.

In January 1988 the Project will begin a new phase of work in an action research programme lasting eighteen months. It will seek to support certain initiatives and monitor and document their progress. It will help evaluate their work and ultimately disseminate the results. The aim will be to record a number of case studies of schools or other agencies actively involved in promoting the use of school grounds as an educational resource, then, to extrapolate from these, key ideas which can be of use to schools generally. The report on the three years' research is due to be completed in August 1989.

If you would like to be included in the Project mailing list, please contact: Learning through Landscapes Project, Three Minsters House, 76 High Street, Winchester, Hampshire SO23 8UL.

References

[1] Learning through Landscapes Project: *The Design, Management and Use of School Grounds* Working Paper No 1 (1987). Available from the address above. ■

Architecture Workshops and Architects-in-Schools

The Royal Institution of British Architect's (RIBA) Architecture Workshops programme illustrates the effectiveness of professional involvement in environmental education. Nigel Frost reports on progress.

Nigel Frost
RIBA National Coordinator of the Architecture Workshops - Architects-in-Schools Programme

Architecture Workshops

The objective of the Royal Institute of British Architects (RIBA) is to establish as many centres with an Architecture Workshop status as possible. This involves a wide range of strategic activities some of which are described in this article. The RIBA recognizes that setting up a workshop with a community group or school is an undertaking that requires commitment and a readiness to explore and develop new partnerships. For example, the Hull Architecture Workshop was originally formed by a group of students from the School of Architecture with support from the local RIBA branch of architects. Now, this Architecture Workshop is funded mainly as a Manpower Services Commission Community Programme Project. The RIBA is able to supply the Hull Workshop with small project grants for work with community groups.

In contrast, two years ago, an Architecture Workshop was established in the grounds of a community school in Peterborough by the headteacher, the warden of the educational development centre and members of local branches of the Royal Town Planning Institute and RIBA. This Workshop survives on the support of the education authority providing teacher secondments, and architect residencies supported jointly with the Regional Arts Association. The RIBA is able to supply small project grants to enable the Workshop to carry out built environment projects with young people from a number of schools in the area.

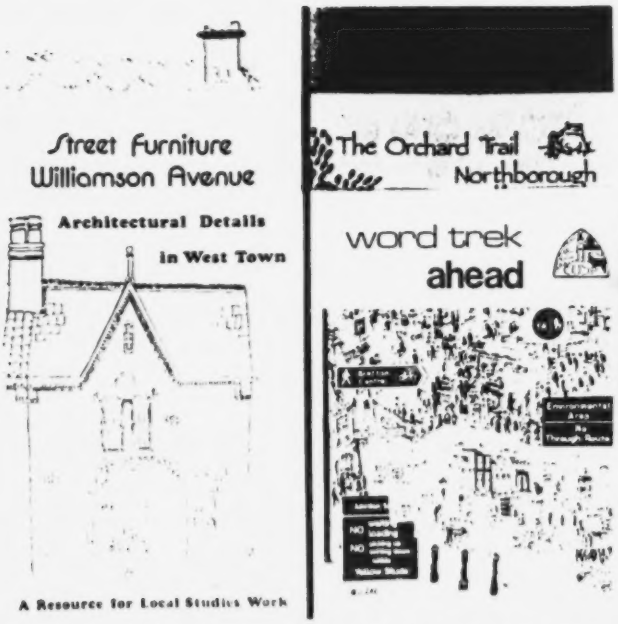
Architecture Workshops are encouraged to develop a self-funding basis through the provision of small RIBA/DoE project grants. Such grants have to be matched and, wherever possible, the sums involved become a small percentage of annual turnover.

There are several strategic means by which individuals interested in Architecture Workshops can develop an understanding of what is involved. For example, individuals as well as teachers can request the RIBA to demonstrate practically what aspects of built environment education will mean to them. The national co-ordinator for Architecture Workshops is responding to an increased demand to provide classroom-based workshops, in-service training activities for teachers, seminars for interested groups and make contributions to national conferences designed to explore new developments in environmental education.

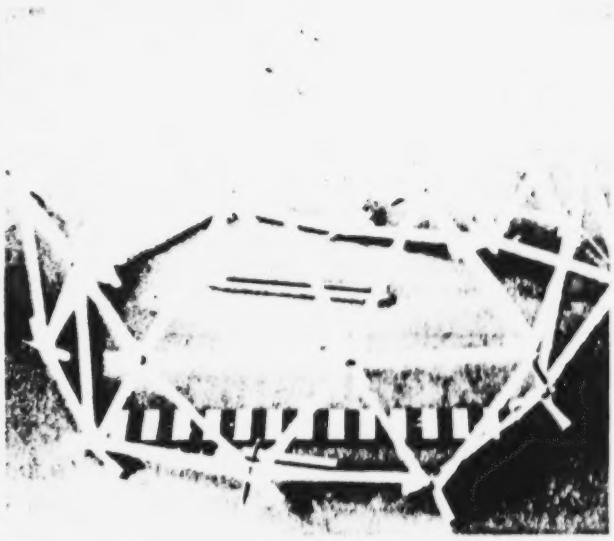
Architects-in-Schools

Architects-in-Schools is a programme of architect residencies in schools and Architecture Workshops. This programme is funded jointly by the relevant Regional Arts Association and education authority with grant support coming from the RIBA to fund the preparation procedures including Induction Workshops for the selected architect and teacher/s. The RIBA's role in providing advice is, increasingly, supplemented by the involvement and experience of existing Architecture Workshops and Urban Studies Centres in this programme.

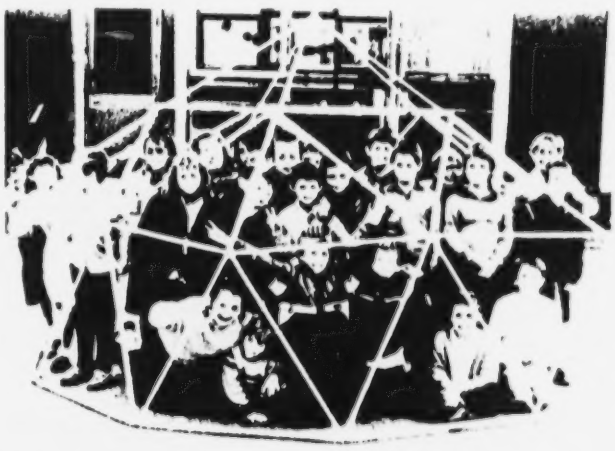
The Architects-in-Schools programme began in



Workbooks, designed and made by pupils, for pupils visiting the Peterborough Workshop



Modelling with fasteners, balsa, straw and paper



Full scale icosahedron construction of two phase model

September 1986, with the first residency commencing at Haverstock School, Chalk Farm in October. Induction workshops (IW) represent a departure in terms of preparations for a residency, as most artist and craftsperson residencies are preceded by a simple meeting, if that. The purpose of the IW is to prepare the participants by laying the ground for a fruitful collaboration and partnership. All IW's have been completely successful in this respect.

The residency at Haverstock, was one of several in 86/87 that involved the exploration of outside areas with a view to putting forward tangible proposals. The architect at Haverstock devised a 'conceptual kit' which enable 15-16 year olds to explore and heighten their awareness of the spatial constraints of particular areas of the school playground.

An Architects-in-Schools residency at Wellingborough and Yardley Hastings in Northamptonshire involved several 6th form design students working with 4th year NCT pupils and 10-11 year olds in a primary school. One of the teachers involved was responsible for coordinating cross-curricular initiatives, thus enabling the links between schools to run smoothly. Horticulture and design came together in this project with the design and construction of a play structure and ecology garden. Parents and residents from the neighbourhood have been involved in the latter stages of the project to assist in the maintenance and construction of the two areas.

Another took place in aWelsh speaking Junior School in Aberystwyth, where an architect worked with two community artists. This project dealt with many aspects of experiencing issues raised through an investigation of a Local Development Plan.

Seminars, conferences and exhibitions

Seminars are held to help bring people together from the environmental education field in order to discuss issues. One held jointly with the RTPI in 1986 enabled participants to lobby representatives of political parties at a national level. Other seminars are held on a local and regional level to explore common approaches that involve an environmental education element.

The Architects-in-Schools Conference served to bring together for the first time, individuals who had had the common experience of residency of an architect in a school or Architecure Workshop. A publication on the subject of Architects-in-Schools has been received in every education authority throughout England and Wales[1]. In addition, there is great demand for a video that is available to individuals and organizations who wish to pursue this approach[2].

Exhibitions are a growing area of RIBA environmental education involvement. Each year, the RIBA hosts a national, sponsored 'Schools' Exhibition' based on a built environment theme. Individual schools, teachers, pupils, LEA's and Architecture Workshops/ Urban Studies Centres are encouraged to submit entries.

In addition to passive exhibitions, the RIBA has developed effective practical means of introducing individuals to built environment education through interactive displays. At the East of England Showground, architects from three different RIBA branches combined forces with teachers and others to work directly with a passing stream of visitors.The RIBA has a proven track record of involvement in the initiation and direction of in-service programmes for teachers. This has been demonstrated through the TRIST/RIBA Built Environ-

ment Project which resulted in seconded teachers from three education authorities working in close association with architects and Architecture Workshops. There is a video describing this project, available from the RIBA[1]. The success of this project was partly due to the support given by the MSC TVEI Unit in partnership with the RIBA.

This partnership is to be developed through the collaboration of architects with other professions in schools based projects.

For further information contact Nigel Frost c/o Royal Institute of British Architects, 66 Portland Place, London, W1N 4AD.

References

[1]*Architects-In-Schools* £.2.30.

[2]*Architects-In-Schools* video £6.00 + vat.

[3]*The Built Environment Project* video £8.00 + vat. ■

Global education

How do environmental education and global education relate? David Selby explains the global education approach and looks at developments in this expanding field.

Dr David Selby
Director at the Centre for Global Education, University of York

What is global education?

There is an emerging consensus amongst global educators that their field of concern has four principal and profoundly interrelated dimensions. The first is the *spatial* dimension. The educational process, it is argued, should foster an awareness and understanding of the increasingly interdependent nature of the contemporary world. Students can only make sense of changes taking place within their own immediate 'world' if they grasp that factors and processes bringing about change operate within a dynamic, multi-layered world system within which the 'local is in the global, the global in the local'.

The second is the *temporal* dimension. Past, present and future are also perceived as in dynamic relationship. Interpretations of the past grow out of our present concerns and prioritizations and out of our (conscious or unconscious) perceptions of the future. Our sense of the future also informs how we act now whilst our present individual and collective actions and decisions cast the die for the future. Although the ostensible function of schooling is to prepare students for the future, it is a focus by and large neglected in the majority of classrooms. Global educators argue that the future needs to be brought centrally into the educational process so that students are given the opportunity to study, reflect upon and discuss alternative, possible, probable and preferred futures.

The third is the *issues* dimension. Contemporary global issues, such as environmental degradation, human rights denial, conflict and world inequalitites, are not only set in time and space but are themselves profoundly interlocking. For instance, development decisions for human communities cannot disregard their environmental impact without, in the short or long term, jeopardising human development. Those decisions will also inevitably involve the prioritization of certain human rights with the consequent possibility of conflict between groups or communities owning different values and perspectives.

The spatial, temporal and issues dimensions can be described as the 'outer' dimensions of global education. These three dimensions, global educators hold, are in dynamic interplay with a fourth, *'inner'* dimension (see Figure 1).

An emerging awareness of the world necessarily goes hand in glove with a growing level of self-awareness. 'As many people who have made voyages of discovery have found, they learn as much about themselves as about the new landscape they enter. The outward journey is also the inward journey. *The two journeys are complementary and mutually illuminating.* A student brought face to face with new perspectives, new ways of seeing the world, alternative visions of the future; a student learning that her life is inextricably bound up with the problems and prospects of people and environments thousands of miles away, will inevitably begin to critically examine her assumptions, perspectives, values and behaviour. *The journey outward to the journey inward.* Likewise, carefully and sensitively coaxed, *the journey inwards is the journey outwards.* ...The person/planet relationship has enormous implications for schools.

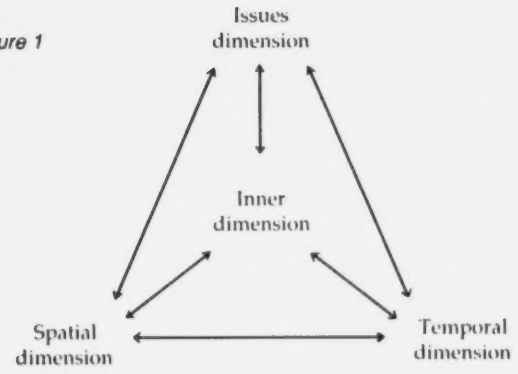
The term 'global education' usefully conveys the further point that initiatives such as development, environmental, human rights and peace education are complementary and mutually illuminating

Once understood, we see that it is not possible to promote planetary consciousness in the classroom without the corresponding promotion of self-discovery.'[1] A concern to foster the two complementary journeys lies behind the emphasis placed by global educators upon learning environments giving free and equal rein to cognitive and affective learning, to the complementary capacities of reason and emotion, intellect and imagination and analysis and intuition. In practical terms, this has led to the development of a wide and varied range of innovative classroom activities including pair and small group discussion work to encourage communication, cooperation, negotiation, perspective sharing and decision making; role play, experiential and simulation activities to promote the exploration of one's own and others' perspectives and viewpoints; and, more recently, the use of guided fantasy and visualization to activate values clarification, creative thinking and problem solving processes.

A constellation of fields

If issues concerning development, the environment, human rights and peace are inseparable on the world stage, they are similarly inseparable in the classroom. The term 'global education' usefully conveys the further point that initiatives such as development, environmental, human rights and peace education are complementary

Figure 1



and mutually illuminating. Many teachers have begun by entering one particular field because that, as far as they were concerned, was 'where the shoe hurt' - for instance, a concern about the destruction of a particular species may have prompted an interest in environmental education, or television images of the Ethiopian famine may have initially triggered a commitment to development education - only to discover the field entered to be broader than anticipated and sharing a close 'family likeness' with several other fields.

Belatedly, global educators have begun to respond to criticisms from the women's movement that they should take on board the issues surrounding the role, contribution and perspective of women in world society. The aims and objectives of anti-sexist education have, thus, found their way into the global education constellation[2]. Even more recently, global educators have begun to discover how much they share in common with holistic health educators who ask questions such as 'Can I regard myself as a well person if, socially, politically, economically or psychologically, I am either an oppresser or being oppressed?' and 'Can I really count myself as being healthy if, as a member of a wealthy society, I am party to a global economic system tilted against the interests of the world's poor?' Such issues have been taken up in the Autumn 1987 number of the *World Studies Journal*, 'Health and Environment'[3].

New developments within the primary phase

From 1973 to 1980, the One World Trust's World Studies Project was responsible for promoting global education at secondary level. Its principal publication, *Learning for Change in World Society* by Robin Richardson[4], is still available and remains a stimulating resource book for teachers. From 1980 to 1983, the Schools Council and the One World Trust ran a World Studies 8-13 Project based at the Centre for Peace Studies at St. Martin's College, Lancaster. This resulted in the publication of a teacher's handbook containing an excellent collection of classroom activities (see *What to Read* below), and the establishment of a national 8-13 network with coordinators in some thirty local education authorities. The Project began a new three-year phase in 1986, and a new 8-13 handbook of classroom case studies and work units is being planned for publication by Oliver & Boyd in 1988[5]. A major national World Studies 8-13 conference in Winchester in September 1987 served to demonstrate the abundance and vitality of school-based and local initiatives flourishing under the umbrella of the Project.

A recent step forward has been the development of a rationale and programme of activities for global education in the infant classroom. Instrumental here has been Susan Fountain who trialled her programme at the International School of Geneva from January 1985 to July 1987 at which point (September 1987) she joined the staff of the Centre for Global Education at the University of York. A book in which Susan explains her work and describes the range of classroom activities is to be published under the auspices of the World Wildlife Fund in spring 1988. Susan sees the infant classroom as crucial for laying the foundations of a cumulative programme of global education. In particular, each child's sense of her own worth, communication and cooperative skills need developing in the early years. Children with a positive self-regard are likely to be more altruistic, generous and sharing in nature. They will also exhibit more positive attitudes towards others, including those in distress, if they have learnt to express their thoughts and feelings clearly and have learnt to listen carefully.

Self-esteem, cooperation and communication are, thus, the three mutually supportive foundation stones of a 3-18 strategy for global education

Cooperative learning activities will build supporting and caring attitudes, promote communication and reinforce self-image through the elimation of failure. Self-esteem, Cooperation and Communication are, thus, the three mutually supportive foundation stones of a 3-18 strategy for global education (see Figure 2).

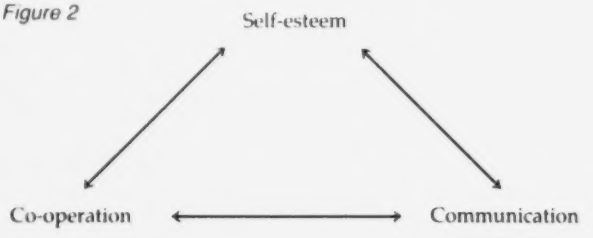
Work with children in the early years will enable the 8-13 World Studies teacher to better capitalise upon the so-called 'plasticity period', ie the period from about 7 to 12 when the child's cognitive development is sufficient to accept a diversity of viewpoints, when she is at her most curious about the wider world, when she is particularly favourably disposed to other cultures and open and flexible in her attitudes to social and political issues[6].

In 1987/8 Susan Fountain's work at the Centre for Global Education will include preparing an 8-13 activity pack on gender issues for publication. Teachers are invited to contact her if they would like to help trial draft activities and materials.

The secondary school

An important recent development at secondary level has been the implementation of the Southern Examining Group's interdisciplinary Mode III GCSE in World Studies[7] in some twenty schools in southern England (see Figure 3 for syllabus Content Model). Interest is now being shown in the syllabus in areas of the Midlands, North-East and North-West England. There have also been some ongoing and very interesting initiatives aimed at infusing a global perspective across the secondary curriculum. Some of these have been described in three fairly recent numbers of the *World Studies Journal* 'Art in Action', covering the performing and visual arts; 'Language and Literature for Understanding and Transforming the World'; 'Global Pi: World Studies in the Science and Maths Classroom'[8]. A number of curriculum areas still need to be addressed in terms of infusing their content with a

Figure 2



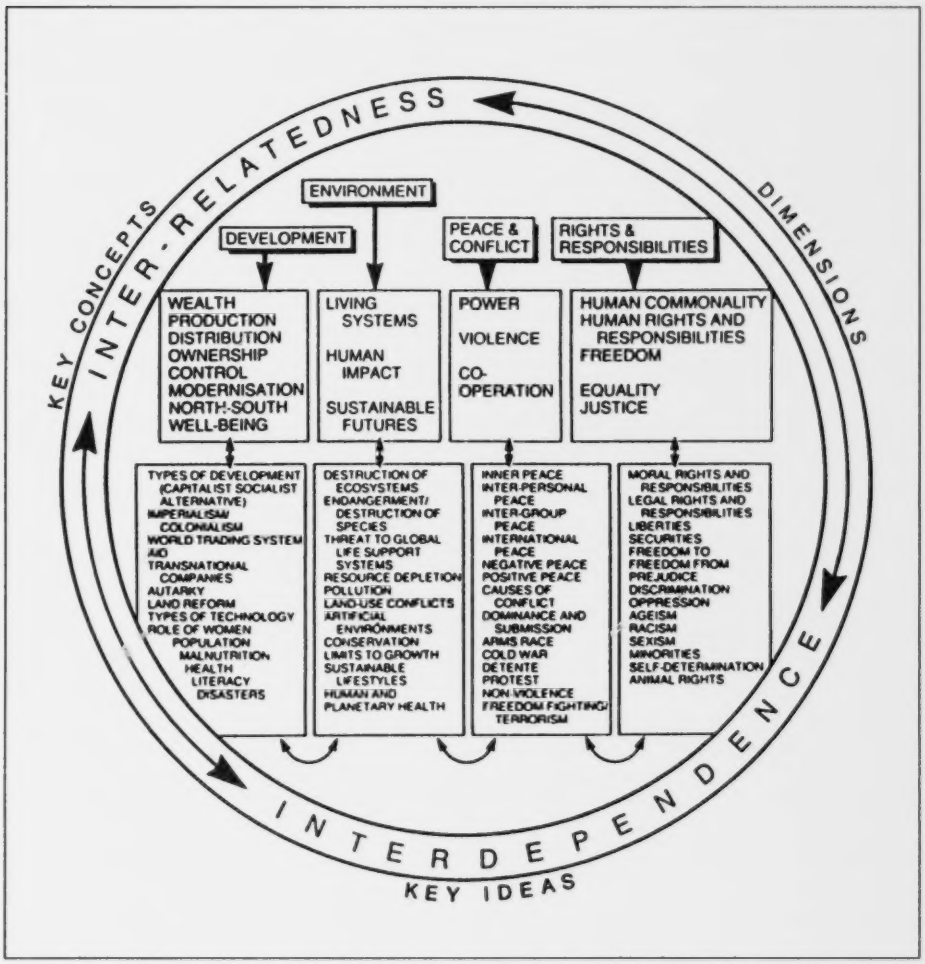


Figure 3 The Content Model for theSouthern Examining Group's Mode 111 GCSE in World Studies as determined by a group of teachers representing schools in Cornwall and Devon. The syllabus, which is available from the Centre for Global Education, suggests an holistic model for understanding the world

global perspective - in particular, music, design, sport and physical education. The Centre for Global Education would welcome approaches from both primary and secondary teachers who would like to work on filling these gaps.

The National Curriculum

In its response to the Secretary of State's Consultation Document on the National Curriculum[9], the Centre for Global Education argued against the narrowness and inflexibility of the proposal to give 80-90 per cent of curriculum time to ten foundation subjects. The curriculum would 'inadequately prepare students for life in a fast-changing interdependent world'. Important skills and insights to be obtained from fields such as anthropology, ecology, economics and the political sciences were jeopardised by the proposal as it stood. Even more disturbing was the apparent relegation of the importance of inderdisciplinary approches within the Consultation Document. "'Real-world problems" and their solutions do not conveniently fall within subject disciplines. Advances in both the arts and sciences in the twentieth century have sharpened our awareness of the interrelatedness of all phenomena: sub-atomic physics, for example, has shown that our understanding of the world cannot be nearly compartmentalised into distinct entities without thereby distorting that understanding.' The response also urged that important cross-curricular dimensions needed to be spelt out in any final statement on the national curriculum. 'Firstly, it is crucial that the education of *all* young people - in both the primary and secondary sectors and across the curriculum - should recognise and reflect the multicultural nature of our society as recommended by *Education for All* (The Swann Report), 1985. Secondly, the primary and secondary curriculum should recognise that "we all live in a complex, interdependent world" and that "many of our problems in Britain require international solutions" (DES, *Education in Schools, A Consultative Document*, 1977). A third dimension would be the environmental: students across the curriculum should be familiarised with the importance of the care and sustainable use of the environment for food production, commercial raw materials, life support systems and the aesthetic quality of the world we inhabit. Fourthly, a curriculum intending to equip pupils for the "responsibilities of citizenship"(Consultation Document, para. 4) must surely recognise education for democracy and human rights as a crucial dimension of the schooling experience.'

Projects

Beyond the projects mentioned above, there are two other current national projects in global education. Both are based at the Centre for Global Education. One, 'Global Impact', sponsored by the World Wildlife Fund, is described by Sue Greig in a separate article. The other, 'Seeing the World in Perspective' is a four-year project sponsored by the EEC, the World Wildlife Fund, the School Curriculum Development Committee, Christian Aid, Oxfam and Unicef. The project is focusing on three ways of approaching what is called 'perspective consciousness' (see Figure 4).

The three approaches reinforce and illuminate one another, making possible an increase in self-knowledge, and a shift in personal perspective otherwise unattainable. This will involve the acquisition of knowledge; the fostering of attitudes of sensitivity, tolerance, curiosity, receptivity, and empathy; the development of intellectual, imaginal, cooperative, and creative thinking skills.

The project will produce a series of students packs for primary and secondary schools, organised around the themes of the environment, development, human rights, childhood, futures, and conflict

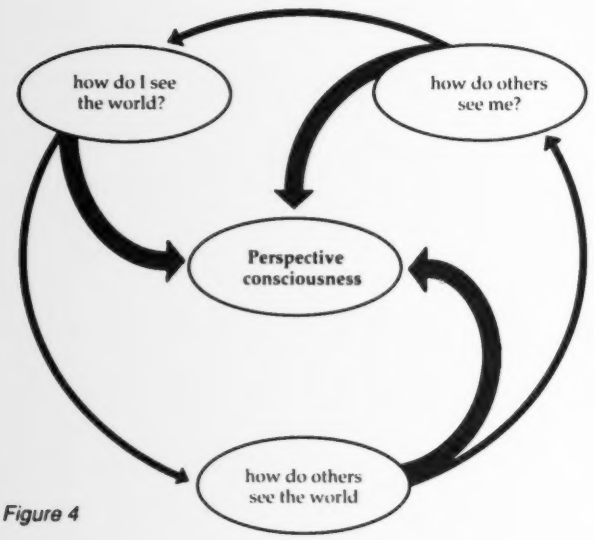


Figure 4

resolution. Through these packs individuals from a number of countries and cultures will be invited to speak for themselves. Primary resource material will include oral traditions, stories, songs, poems, biography, personal histories and interviews, and visual material. The packs will include a rich variety of activities and work sheets for students and an introduction for teachers. In addition there will be a teacher's handbook, giving background information and additional resource material. This will include a varied collection of student activities and learning techniques, affirmation and self-esteem exercises, simulations and role plays, creative problem-solving techniques and visualizations.

The project aims to have a wide-ranging and long-term impact. First, it is hoped that primary and secondary schools will incorporate perspective consciousness into their work as a crucial dimension in preparing their students for life in the twenty-first century. Second, it is anticipated that students will acquire the capacity to grow in new directions in their understanding of themselves and others. For details of the project write to Sandy Parker at the Centre for Global Education (address below).

What to read

For an introduction to the theory and practice of global education, the following books are suggested:

S Fisher & D Hicks *World Studies 8-13: A Teacher's Handbook*, Oliver & Boyd, 1985.

S Greig, G Pike & D Selby Earthrights. *Education as if the Planet Really Mattered*, World Wildlife Fund/Kogan page, 1987.

G Pike & D Selby *Global Teacher, Global Learner*, Edward Arnold, January 1988.

An annually-updated *List of Articles and Books on Global and Multicultural Education* is available from the Centre for Global Education, who also produce a free *Publications Catalogue*.

Forthcoming events

A national conference focusing upon the work of the 'Global Impact' project will be held at Losehill Hall, Derbyshire, from 11-13 March 1988 (details from Graham Pike, Centre for Global Education). The bi-annual conference of the World Studies Network will be held from 16-18 September 1988 at Sheffield University. The conference will focus upon class and gender issues. Details from Margot Brown, Centre for Urban Educational Studies, Lawn Lane, Vauxhall, London SW8 1TU.

Notes and references

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City Farms and Community Gardens

City Farms offer a unique resource for environmental education. John Bond describes the environmental approach of City Farms and the range of educational benefits that they offer.

John Bond
Technical Officer for the National Federation on City Farms and Community Gardens

Beneath the tower blocks and behind the factories, youngsters in a school party chatter excitedly as the chicks begin to emerge from their shells. Volunteers groom calves and inspect the condition of their coats before deciding if veterinary treatment is necessary, whilst in the craft room a group of pensioners and unemployed volunteers dye newly clipped wool from the sheep, using herbs that they have grown in the garden.

Aspects of country life such as these have now become commonplace in many of our inner city areas as the

City Farming and Community Gardening movement has firmly taken root.

City Farms and environmental awareness

City Farms and Community Gardens can be thought of as environmental resource centres with a farming and growing theme and, as such, offer a range of unique learning experiences for children and for the community in general.

Set up on derelict or underused land in over 40 of our major cities, new towns and urban fringe areas, Farms and Gardens are community initiatives, created by and run for local people. They firmly belong in the voluntary sector, are essentially schemes concerned with social welfare, the environment and education and are very much involved with providing opportunities for all members of society who can take part in, and benefit from their various activities.

Environmental awareness and practical action is part of the very ethos of these voluntary projects

Environmental awareness is a central feature of the projects and the work that they do. A highly developed 'Conservation Strategy', prepared by the National Federation of City Farms and Community Gardens (and evolved from the World Conservation Strategy in 1982) and 'A Statement of Philosophy' adopted in 1987 highlight a commitment to promoting sustainable development, growing food organically, considering the welfare needs of animals as well as those of people and the environment, and producing products and services that do not harm or exploit the ecosystem.

City Farms and Community Gardens are therefore a potent force within the environmental movement. They are concerned

with many areas of interest, such as creating wildlife habitats, raising food of the highest nutritional quality, avoiding the use of damaging chemicals and constructing solar-energy greenhouses. Their programmes of environmental education must therefore be seen against this background. Environmental awareness and practical action is part of the very ethos of these voluntary projects. Conservation naturally becomes a feature of their everyday teaching as well as part of their daily work.

The educational benefits of City Farms

Many City Farms and Gardens are ideal locations for teachers to carry out environmental education offering many opportunities to study nature and natural systems in highly urbanised areas. Sites consist of an area of land - between 0.2 and 12 ha (one half to 30 acres), buildings such as community and educational rooms, workshops and animal houses, and supporting infrastructure.

They are very much geared to the needs of formal education and most receive school parties as well as provide informal enriching experiences for all other users whether they be able-bodied or disabled, young, old, Muslim or whatever.

Although there are many opportunities for 'conventional' environmental education (see table) City Farms and Community Gardens see environmental participation not as an end in itself, but a means to an end. In other words, it is a 'tool' or a means by which people can participate, learn and grow.

Whilst creating a conservation project which brightens up the area or provides a wildlife refuge, people are also learning about their environment. They are finding out how it can be managed, how elements interrelate and how it can be utilised without causing harm. In effect, the creation of the conservation area is only part of the reason for carrying out the work.

City Farms are essentially concerned with living things; animals and plants that children handle and nurture. These are very strong stimuli which can help children understand some concepts in ways not easily achieved by other means.

Rearing animals and growing plants can enrich lives. They provide an aspect of living which is so often lacking now, such as our links with the natural seasons. Children can begin to appreciate the cycle of life from birth through to death and also follow the ecological food cycle - from grass to milk. This is becoming more important as an increasingly aware consumer movement develops. Youngsters handling animals on a regular basis also tend to have a greater maturity towards sex at an earlier age. It also allows them to understand various relationships, such as the fact that birth follows a mating.

Farms give opportunities to explore personal attitudes: the welfare of living things, religion, morality, ethics and taboos (such as the concern over pigs amongst some non-Christian communities). They can also help to develop a person's own qualities, confidence and responsibility for other living things. Children can begin to experience many different emotions. They can learn that small things such as bees and bantams can be more dangerous than larger creatures such as cows.

Many inner city teachers with children from different ethnic backgrounds value the opportunities City Farms provide in helping those children acquire and develop language. Seeing an animal at close quarters can often be the spur that unblocks the barrier to understanding.

City Farms are essentially concerned with living things; animals and plants that children handle and nurture

Advantages

Voluntary agencies managed by local people such as City Farms and Community Gardens have a number of advantages and disadvantages when compared to state sector education. Some of the advantages are described below.

- Community-run bodies are usually highly innovative as regards new approaches and able to respond to new situations at a very early stage. This is because they tap into a local pool of expertise, drawing in not only educators but others keen to participate in the desire to widen people's perceptions about the environment.

• Environmental activism has long been a driving force in Britain and City Farms and Community Gardens harness their members' interests, skills and goodwill. Qualified teachers in particular, value the opportunities that the informal education system provides and many donate their time freely.

• Informal environmental projects are not restricted by the examination system (although they can accommodate its requirements when asked) and are not constricted by institutionalised approaches and thought.

• The voluntary sector is nothing if not resourceful. It operates on a small scale, using cheap facilities and low budgets. Large land areas are not always necessary for environmental work. (The concept of succession can be easily be demonstrated by studying insects in the compost pile for instance).

• A City Farm or Community Garden can service several schools in a city, extending and enhancing work done on school sites or providing unique facilities - in animal husbandry for example - which cannot be undertaken at school.

• As they are not part of the school system, City Farms and Gardens and their staff are often looked upon differently by pupils using them. Different learning situations and different teaching approaches often mean that children respond very positively. Sometimes individual youngsters have a difficult relationship with their teachers but develop when working with other adults.

• City Farms can offer a range of unique teaching resources and animals in particular have great value. In a sense, the projects are trying to fill the gap left by the loss of rural science, a subject where relevant, practical hands-on experiences flourished.

• These voluntary projects offer environmental education to all, so that there is a great deal of cross-fertilising of ideas, exploitation of a whole range of different people's experiences, and social mixing. And because environmental education is only one aspect of education being undertaken, these ingredients in combination help spark off new approaches - such as the use of computers in recording liveweight gains; the handling of puppets in a session on desertification in Africa and the stimulus of protective beekeepers clothing as a basis for drama and creative writing.

Disadvantages

The main problem faced by voluntary sector education concerns funding. Many of the difficulties are created directly and indirectly by the low level of funding community projects receive. This limits the teaching opportunities that can be provided and diverts people's energies into fundraising rather than getting on with the key role of developing programme and facilities. As in other fields it is often easier to obtain capital funding to start work off, than revenue monies to keep it going.

Another major difficulty is the use made of projects by visiting teachers, few of whom prepare before bringing their school parties. Teachers need to be familiar with what projects can offer so that the maximum learning value can be extracted from a visit by a class. Farm staff also need to be made aware of how their work will be followed up in the classroom, what special needs the group might have and soon.

A few examples of practical environmental activities linked to education work carried out by City Farms

Conservation	practical conservation of rare animal breeds creation of vegetable sanctuaries cultivation of threatened Victorian cottage garden flowers
Habitats	- growing patches of umbellifers for natural parasites and predators - designing bee (land)scapes and butterfly gardens - re-creating agricultural wild flower meadows
Recycling	- salvaging timber, ironmongery and other material for building - collecting and using waste food from the city for animal feed and composting - using tyres to make ponds, stabilise slopes and grow plants

Children and animals
City Farms allow intimate contact with the stock, unlike zoos. The building behind is constructed from recycled materials

Conclusion

City Farms and Community Gardens can make a valuable contribution to environmental education. Their unique facilities make them a useful resource in getting over many difficult concepts in a interesting and practical way.

References

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City Farmer, quarterly magazine.

Both published by NFCF. For further details contact NFCF, 66 Fraser St, Bristol BS3 4LY enclosing sae. ■

Reports from CEE and some member organisations

Council for Environmental Education

The following is largely a digest of CEE's Annual Report 1986-7, *and readers are recommended to refer to the report for further information and details of work not included below.*

Structure

A rearrangement of CEE's internal structure involved the setting up of a Formal Education Unit which complements the Youth Unit by providing a focus for CEE's responsibities in formal education. The unit is headed by Dr Ewan McLeish.

European Year of the Environment (EYE)

CEE's involvement in EYE began in 1986 when the UK EYE Committee asked CEE to produce material for teachers to celebrate the Year. CEE felt that this could be best achieved through local cooperation and all local authorities in Scotland, Wales, Northern Ireland, and England were approached and invited to contribute local material to a national 'pack' produced by CEE. Very nearly 100 per cent of authorities agreed to circulate the pack to schools and the majority of these included their own material, ranging from contact lists to comprehensive resource guides and policy statements.

The pack itself comprised a booklet *Schools - Educating for Life*, a teacher's newspaper, a copy of *Newsheet* and information about the Year. An accompanying Wallchart entitled *Britain's Changing Environment* was also produced in association with Pluto Projects and Pictorial Charts Educational Trust.

In addition to the Teacher's Pack, an introductory newspaper was produced by CEE at the beginning of EYE, and a third edition of the paper is planned for the end of the Year. The pack received funding from the EYE UK Committee, the Department of the Environment, the Nature Conservancy Council and the Commission of the European Communities.

A lecture entitled 'Believing in the Environment' was put on at the Royal Society of Arts before an invited audience of educationalists, environmentalists, leaders from the major religions, industrialists and politicians. It was given by Martin Palmer of the International Consultancy on Religion, Education and Culture (ICOREC), and examined the ways that different belief systems reflect and influence attitudes to the environment.

Information

The Information Centre

The first year of the new Centre has been a busy one with a steady increase in visitors using the facilities. Local teachers and students, researchers from publishers and the media, international visitors and staff from voluntary organisations have all used it. The database of environmental education resources now has 6 700 records and we continue to scan catalogues from many sources for relevant environmental education materials.

In 1986/87 the Information Service dealt with over 5 000 enquiries, mainly from teachers, pupils and researchers. Once again, the most popular topic for information was pollution, especially acid rain.

Regional Information Centres

Centres for information about CEE exist in Newcastle, Birmingham, Liverpool, Leicester and Bridgwater. In June 1987 the City Discovery Centre in Milton Keynes became the sixth regional centre. The improvement of links with the regional centres and the encouragement of regional forums for environmental education remains a high priority.

Publications

Newsheet

The single A4 sheet remains CEE's most popular publication with over 23 000 copies distributed ten times a year. It reports news of CEE activities and details of environmental education resources from commercial and non-commercial sources, together with notices of relevant courses and events.

Annual Review of Environmental Education

This new journal replaces *REED* which has been discontinued after 13 years.

The Good Stay Guide

This new publication replaces the *Directory of Outdoor Studies Centres in England and Wales*. It is a much more substantial book containing introductory chapters on topics such as safety, planning the stay, habitats and regional descriptions. The collection and processing of the data was carried out by CEE and funded by the Countryside Commission.

Go For It

This pack of environmental education activities for young people and youth workers was published in March 1987. Funded by the Department of the Environment and Lloyds Bank, the activities are designed to introduce young people to environmental issues.

Resource Sheet Series

10 000 copies were sold in 1986/87. The titles are compiled using CEE's database and are updated annually. A new title, *Tropical Forests*, was added this year.

Coordination and cooperation

General Assembly April 1987

The theme was sharing experience related to European Year of the Environment. Some fifteen organisations gave presentations of their work, followed by discussion.

Annual Conference October 1987

One hundred and fifty people attended the two-day conference 'Encouraging Positive Attitudes to the Urban Environment' organised in association with the London Borough of Lambeth and hosted by IBM UK. It looked at

the role of environmental education in an urban environment, emphasising education strategies for increasing community involvement in environmental issues.

Media Forum

The Media Forum was set up in July 1986 with a working party including members from the IBA Education Department, BBC Education and CEE. The Forum has provided the focus for various activities during EYE, including providing information to organisations on environmental issues relating to the media.

A series of four London seminars was held looking at issues relevant to both environmental organisations and the broadcast media. In addition, the Media Forum sponsored a series of regional workshops for key personnel from local environmental groups and from the BBC and IBA regions.

GRIST

The Local Education Authority Training Grants Scheme, known as GRIST (Grant Related In-Service Training) has major implications for environmental education. In order to clarify the situation CEE organised a one-day conference at which participants could learn about the Scheme and could discuss ways in which environmental organisations could adapt their services to take advantage of the new arrangements.

Education and Training

Youth Training and The Environment Project

This is a pilot project to look at ways of integrating environmental education into youth work, and into youth worker training. Two project officers based in Staffordshire and Birmingham respectively are working with the local youth service, both statutory and voluntary, developing activities and training programmes, which will then be developed into a national strategy.

Kodak Conservation Awards

The Youth Unit has continued to act as consultants to the Kodak Conservation Awards, and have run nine regional training days in cooperation with regional environmental groups.

Research

CEE's three main research projects - 'Environmental Education and Training in Industry', 'Training and Education in Relation to Environmental Problems' and 'GCSE and Environmental Education' - are reported in this issue of *AREE*. ■

The Society for the Interpretation of Britain's Heritage (SIBH)

The Society has had another good year with increasing membership, excellent conferences, the further development of the Carnegie Interpret Britain Awards and the decision to sponsor jointly a Second World Congress on Heritage Interpretation in the UK in 1988.

Membership topped 400 at the end of 1986, but the Society are anxious that this should reach 1000 by 1990. A review of our activities was carried out by the Committee and the membership at its April 1987 AGM, approved a 12-point Development Plan for the next three years aimed at increasing the services to members and developing the influence of the Society nationally. A key element of this is strengthening our ties with the Centre for Environmental Interpretation in Manchester Polytechnic. The Society hopes to appoint a Development Officer in the next few months and agreement has been reached to establish a base adjacent to CEI.

The Carnegie Interpret Britain Awards continue to prosper and after four years some 300 schemes have been considered. The 1987 Award Ceremony was held in Belfast in November followed by a three-day Conference. The event was sponsored by the Northern Ireland Tourist Board who are anxious to raise the profile of interpretation in the Province.

The 1987 AGM Conference was held in Wigan and attended by 60 delegates who visited the nationally famous Wigan Pier project.

The Society and CEI are jointly sponsoring the Second World Congress on Heritage Interpretation and Presentation to be held at University of Warwick from 30 August-4 September 1988. It is hoped that over 400 delegates will attend from all over the world to discuss a wide range of issues concerning interpretive techniques and practice and environmental education.

For further information, contact David Uzzell, Department of Psychology, University of Surrey. ■

The British Ecological Society (BES)

During 1987, the BES has continued to try and help improve the quality of ecology teaching at all levels. Residential courses for teachers were held in Hull (primary teachers), Lancaster (practical demonstration of ecological principles) and Preston Montford (habitat studies). Funds are available to support attendance by teachers at these and all other BES meetings.

With the advent of GCSE, we are anxious to help all who are involved in teaching ecological aspects of the new syllabuses, especially those who were previously deterred from teaching ecology. As a result, regional groups are being established, based on teachers belonging to the BES Education Group; details available on request. BES has also sponsored a Resources Coordinator, responsible for much of the information in 'GCSE Biology and the Environment'. A policy document on Ecology in the Curriculum should soon be ready.

As a contribution to EYE, a competition has been launched for ecological projects in schools and colleges (closing date 31 October 1988).

The Society's 75th Anniversary in 1988 is also being marked by a conference on 'Techniques in the Teaching of Ecology', University of Keele, 6-9 July. This will concentrate on primary and secondary levels, and most of the time will be devoted to workshops and discussion groups, involving teachers, advisers, examiners and representatives of Field Studies Council, Country Naturalists' Trusts, Royal Socieity for the Protection of Birds, British Trust for Conservation Volunteers, etc. If you would like to share your experiences of ecology teaching in theory and practice (pitfalls as well as success stories), please let David Harding have a summary of your proposed contribution as soon as possible.

Information about these and other BES activities, including membership, is available from Dr D J L Harding, School of Applied Sciences, The Polytechnic, Wolverhampton WV1 1LY. Telephone : 0907 313001. ■

National Association for Enviromental Education (NAEE)

The NAEE aims to promote environmental teaching in schools and colleges by
1 promoting research
2 organising conferences and seminars
3 producing publications.
Have these objectives been attained in 1986/87?

Research

During the course of the year the Association has had a teacher fellow at Warwick University. He has attempted to assess the impact and organisation of environmental education in schools nationwide. In particular he has been looking at the establishment of environmental education policies in schools and the part which external organisations (including CEE and NAEE) have played in them. With this completed we hope to update our *Statement of Aims*.

Meetings

The World Wildlife Fund and the NAEE held a most successful one-day meeting at the London Zoo in May. We looked at the way by which schools could deal with the topics of rainforest destruction and development aid. We have published the input by M Partha Sarathy and hope to have the rest of the proceedings in print soon. Disastrously we had to cancel our 26th Annual Conference with its theme 'The European Dimension'. The overall lack of promised responses from the mainland of Europe left us with no alternative but to cancel - and a large financial burden to carry. Better news is that we have recently held a very happy, full and purposeful 27th meeting at Plas Tan Y Bwlch, the Snowdonia National Park Centre. Two London meetings used the Education Centre at the Tower and the Thames Barrage as venues, in pursuance of our policy to look at the provision for schools at 'honey pot' locations.

Publications

In addition to publishing our regular journal *Environmental Education* and *Newsletters*, we have fully revised our *Practical Guides Traffic Study and Surveys* and *An Incubator in the Classroom . Organisation of Out of School Visits* is being reprinted. The traffic book was used as the basis for the 'Motoring and the Environment Award Scheme for Schools' promoted by the Society of Motor Manufacturers and Traders in co-operation with the NAEE. This was a contribution to EYE.

Throughout the year the NAEE has responded to innumerable requests for help and advice and our permanent base at the West Midlands College has been kept busy. Membership subscriptions (we have two local new associations in Gwynedd and Wigan to record), some sponsorship and publication sales do not meet our expenses; it is the Department of the Environment matching grant which keeps us going. We are more than grateful for it. ■

World Wildlife Fund (WWF)

The WWF UK Education Programme aims to reach all young people, not just those already practically involved in the environment. The main focus is on generating interest amongst and resources for teachers, teacher trainers and decision-makers in education. The three major components of this year's and next year's work are curriculum influence, teacher education and producing teaching materials.

The Global Impact study commissioned by WWF in 1986 has produced its first report on the interaction between environmental and development organisations and schools. A noteworthy finding is that 78 per cent of primary and secondary school teachers surveyed think that development and environmental education are central to achieving an understanding of, and active participation in the world today.

The book *Earthrights* which stemmed from this was published in May 1987. It draws together environmental, development, peace and human rights education in a highly readable mixture of background information, research findings and examples of good classroom practice. The Global Impact programme continues and there will be two major conferences next year, one for teachers and NGOs and one for policy-makers in education.

Two major changes facing schools are GCSE and the core curriculum. WWF is working with representatives from examination boards to increase the environmental content of GCSE and 'A' level exams, as well as lobbying, consulting and holding meetings to ensure that environmental education is well represented in the new curriculum. *Education, Ecology and Development* is a stimulating series of papers by educational researchers deeply concerned about the environment and the nature of our education system. The series will contribute to this debate. In- and pre-service training play key roles in generating positive attitudes towards environmental education among teachers and WWF's teacher education programme is involved in research and development of appropriate materials. A book for teacher trainers by Roy Williams of Sussex University will appear in 1988.

Teaching materials

Meanwhile WWF continue to produce a range of teaching resources for use at primary and secondary levels. The new musicals *African Jigsaw* and *Along Came Man* are proving both musically satisfying and a powerful means of raising young people's awareness of environmental issues. Publications due out in late 1987 or early 1988 which are relevant to development issues include the following: the *Only One Earth* pack of a schools video and GCSE teaching materials based on the recent TV series; an education pack on urbanisation issues which can be used with the secondary age range as follow up material to *African Jigsaw* or in its own right; a series of teaching units entitled *What We Consume* for lower secondary on political and economic aspects of environmental questions. Other new environmental education materials will be available for maths, science, humanities and RE teachers.

A free information pack is available from Panda House, in return for an sae and 38p p&p. Details of all WWF's educational projects and activities are given in the new free termly teachers' newsletter, 'Lifelines.' ■

Nature Conservancy Council Environmental Education Section (NCC)

Over the last year our education effort has focused on formal education in schools and colleges. The Environmental Education Section has now been moved from the Public Affairs Branch to the Training Branch. This will provide greater opportunity for looking at the developing continuum between education and training.

Two documents that focus on fieldwork and environmental education have been sent to every Head of Science in England and Wales. *GCSE*

Biology and the Environment looks at how environmental education approaches can be incorporated into GCSE biology. *Earth Science Fieldwork in the Secondary School Curriculum* focuses on the place of Earth Science in a science curriculum.

NCC is encouraging environmental and educational organisations to adopt the 'Changing Nature' approach. This uses images of the past and present of any particular locality to act as the basis for thinking about alternative futures and possible environmental action. A slide pack and booklet is being prepared to encourage this approach.

'Coastwatch' is a national project that encourages volunteers, school groups and local organisations to monitor coastal habitats and human impacts in an attempt to support coastal nature conservation.

Two reports to be published in 1988 highlight examples of good practice in primary school environmental education. *The Provision of Environmental Education in Rural Areas* report is based on a brief review of 36 rural LEAs in England, Wales and Scotland with recommendations for environmental education support in the more remote rural primary schools of the UK, where countryside influences and issues surround the school. *The Use of School Nature Areas* report highlights the cross-curricular use of school nature areas using 16 case-study primary schools in England and Wales. Recommendations for the future involvement of environmental and educational organisations are made, especially in the light of the 'Learning Through Landscapes' project.

Several publications are nearing completion and should be available in 1988. *Teaching about Freshwater Conservation* is written as a 60-page teacher's sourcebook for GCSE biology, with pupils' activities and investigations and a complementary text which looks at the nature conservation and development aspects of freshwater species and habitats. *Teaching about Woodland Conservation* is still in preparation.

Fieldwork on Farms contains 6 computer data files and teacher's notes which are aimed at 9-14 year olds who have established a school farm link. The datafiles provide a base for annual and spatial comparisons of farm features such as agrochemicals, arable weeds, hedgerow trees and shrubs, crops and livestock. The farming year datafile allows comparisons of farming activities for each month for different farms or the same farm over successive years.

The first of our web mobile series has been produced for ponds.

A new series of leaflets entitled *Nature Conservation Points of View* has been produced which looks at the two extreme viewpoints in issues involving nature conservation. These have been produced in response to general enquiries. New Information Sheets on videocassettes and computer programmes and games on nature conservation have been prepared. There are also new reading lists on school nature areas and marine environments (in preparation).

Supporting educational initiatives

NCC provides grant aid for appropriate educational initiatives. 'The School Scheme' is now in its third year and provides, after liaison with LEAs, financial support for over 500 schools per year. NCC are major supporters of the Open University package Practical Conservation for Land Managers. This material which focuses on the management of different habitats will be of use in TVEI, BTEC and higher education. NCC is also supporting the CEE Youth Training and the Environment Project.

For further information on school grants, the youth project and the Open University package, please contact Grants Section.

Providing sites for learning

Some of the 214 National Nature Reserves (NNR) in England, Scotland and Wales are well used by educational groups. At present we are reviewing and starting to monitor the educational use of NNRs before we develop a more positive policy for education on these sites. In conjunction with the Field Studies Council, we are developing some NNR case study packs for leaders of 14+ age groups. They are using issue-based curriculum models such as *Science and Technology in Society* (SATIS) and *Geography 16-19*.

For further information or advice contact Adam Cade. ■

The Geographical Association (GA)

The Environmental Education Working Group (EEWG), a sub-committee of the Geographical Association's Education Standing Committee, has had another active year. The annual field meeting was based on the Lightmoor Project, a self-build housing scheme on the edge of Telford with an integral measure of social development. The scheme was well received by the planners, educators, architects, community workers, students and environmental managers who comprised the GA group on 9th May. Next year the EEWG plans to study the proposed Mersey Barrage.

The EEWG organised a symposium on marine environments at the Geographical Association Annual Conference at Easter.

Whilst the above events provide the EEWG with public platforms, the group meets three times a year to discuss environmental education in relation to the GA. The group includes representatives from, or has representation on, other environmental education bodies. The group's programme includes preparation of publications such as *Good Ideas for Environmental Education* and *Criteria for the Evaluation of the Environmental Content of Published Material* and is shortly to include a joint meeting with another GA sub-committee on 'Environmental Education in Primary Schools'.

Many other activities of the GA should receive attention in relation to environmental education. The theme of the 1987 Easter Conference - 'The Science of the Unknown : Environment, Exploration and Education' - speaks for itself, whilst the titles of the many lectures, symposia and field excursions that comprised the programme provide the detailed evidence. The Association's journals, *Geography* and *Teaching Geography* regularly include articles on environmental issues. ■

The Association of Agriculture

Meeting the Educational Challenge

With the assistance of welcome new funding and a strategy for meeting the needs of teachers, the Association of Agriculture identified in 1987 certain key areas for development.

Central to its policy is a series of in-service teachers' seminars on 'Farming and the Countryside'. Their object is twofold : to brief teachers on the changing face of farming and to highlight resources for learning with special reference to the GCSE. The first two were held in London and the West Midlands, with others to follow in different regions.

Mindful that its educational

advisory service dominates its day-to-day work, the Association added to its list of publications which now number over 50 items. It sought, in particular, to respond to the growing number of letters from heads of chemistry departments facing competely new syllabuses and requiring first-hand material on topics of agricultural relevance and controversy.

New publications in 1987 were Information Sheets on *Pollution, Agricultural Surpluses and Third World Hunger* and *Agricultural Questions of the Day*, leaflets on *Additives in Animal Feed* and *Alternative Uses for Farmland*.

In this field, the Association frequently works successfully with other bodies. For example, the Open University has selected *Modern Farming and the Countryside* as a compulsory set book for the 4500 students following the Open University Technology Foundation Course in 1988. For this the two authors, Mike Soper and Eric Carter, produced a short update on recent developments covering aspects such as ESAs and the Agriculture Act 1986.

The General Secretary has been invited to assemble an editorial group and draw up guidelines for both teachers and farmers involved in school/farm visits. The resulting text, *Learning from the Land: Opportunities for Farmers and Teachers* has attracted a substantial sponsorship for a print run of 250 000 copies.

The Association has also established a resource bank of leaflets, produced by other organisations, on a whole variety of topics, and it is intended to expand this service in the coming months. A 'learning link' is planned, in which the Association would act as a clearing house for information on ideas, projects and initiatives in different parts of the country. ■

Royal Society for Nature Conservation (RSNC)

RSNC celebrated its 75th anniversary this year and was again very active in education and interpretation. One example of this was the second National Wildflower Week which promoted greater awareness of wildflowers and the need for wildflower gardening.

Many of the 48 local Conservation and Wildlife Trusts associated with the RSNC have expanded their educational programmes. A number increased their education staff while new publications ranged from guides to educational opportunities on reserves to a cross-curricular approach to the study of heathlands. This increased commitment to education by the RSNC and its Trusts was demonstrated at the first major residential education conference, attended by delegates from 30 of the Trusts.

The main thrust of the RSNC education programme was implemented through its joint sponsorship of the WATCH Trust for Environmental Education. WATCH, as the junior membership of the Conservation Trusts, has continued to expand with individual, group and affiliated membership reaching record levels. In this, the tenth year since its formation, the WATCH Trust has continued to produce innovative projects.

The largest of these has been 'Acid Drops', in conjunction with the Field Studies Council, which first ran in October 1986. Over 20 000 young people took part with Acid Drop kits produced with support from BP, BDH and the DoE. The results have enabled a simple predictive model for acid rain to be formulated and this success has been followed up with increased European involvement as part of an expanded EYE project this autumn.

'WATCH on Stream', another pollution project, funded by British Telecom, uses a pollution slide rule to assess water quality using biological indicators.

A third project, the *Really Useful Insects Pack*, produced with the support of the Heinz Guardians of the Countryside Campaign, combined Ladybird Spot (1986) and Humble Bumble (1987) surveys into one colourful kit. Nearly 10 000 kits have already been sold. Results of bumblebee walks and ladybird spots are being analysed by research teams at Cambridge University.

However, WATCH's aims are not just achieved through these national projects. The production of its own musical *Woodland Genesis*, co-operation with the Whirligig Theatre's *See-Saw-Tree* production, and development of computer software demonstrates its expanding commitment to environmental education across the curriculum. ■

Marine Conservation Society (MCS)

The Marine Conservation Society was set up to fill a glaring gap in the conservation movement; the safeguarding of Britain's seashore and coastal waters. Hand in hand with this gap was the lack of educational interest in the seashore, and this is one area the Marine Conservation Society is concentrating on.

Last summer the Society staged, for the second year, a programme of wardening that has seen wardens at seven sites around our coast, talking to members of the public, conducting guided shore walks, and giving lectures and slide shows in the evenings. No such programme, with an exclusively marine bias, has ever been launched before and although still at an experimental stage, it is providing extremely successful. Compared with the land, the sea and seashore is a relatively natural place with great opportunities for examining plants and animals at close quarters. In summer, adults and children flock to the coast in great numbers. The wardening programme is aimed at adults and children alike but it is easy to see that it has been the children who, with their natural tendency for rock-pooling, have been the most successful contacts. The wardens have been based at Lulworth Cove, Dorset; St Abbs Head, Borders; Cape Cornwall; the Menai Straits; Wembury Cove, Devon; Newton-by-the-Sea, Northumberland; and Fort Bovisand, Devon. The programme was sponsored by World Wildlife Fund/Heinz Guardians of the Countryside and it is hoped to develop it further next summer.

Other educational work has been the continued running of marine life identification courses, aimed at students and enthusiastic amateurs. They take the form of sample collection at a nearby coastal location and inspection and lecturing in the laboratory. Although only half a dozen or so each year are run, participants come from far and wide.

The Society continues to produce slide sets and notes on British Marine Wildlife, and their quarterly magazine, free to members, contains articles on a wealth of conservation issues affecting our seas. Soon to be released is the Society's first teacher's pack on the sea.

Details can be obtained from the Marine Conservation Society, Ross-on-Wye, Herefordshire HR9 5BU. ■

The Royal Town Planning Institute (RTPI)

The RTPI was pleased to lend financial support to the CEE study on the environmental content of GCSE syllabuses. This has been of value to many sister organisations. For example, the Civic Trust published its view of the GCSE in the autumn issue of *Heritage Education News* with the aim of forging links between teachers, planners and the Local Amenity Societies.

'GCSE and beyond' was the theme of the conference organised by the RTPI national environmental education group and held at Losehill Hall in November 1987. It brought together teachers, planners and others aiming at collaboration in secondary and sixth form work. Roger Jenness, of Southampton City Planning Department, has organised a county-wide monitoring of the GCSE demands made by pupils upon the 13 Districts in Hampshire and has reported the results to Chief Planning Officers. Together with Hampshire County Planning Department they have recently published a *Directory of Information* for teachers. This complements and augments the resource document already published in an updated form by the Southern Branch of RTPI. This second edition covers the counties of Buckinghamshire, Oxfordshire, Berkshire, Hampshire and the Isle of Wight.

A number of other RTPI branches have produced similar resource registers for environmental education. Perhaps the most significant of these, West Midlands (1987), draws on the experience of previous directories and has placed free copies in every primary and secondary school in Shropshire, Staffordshire, Warwickshire and Herefordshire/Worcestershire as well as the Metropolitan Districts of the former West Midlands County Council area.

At Lanchester, Susan Stern, a planner, and David Price, a teacher, have computerised data on what planning departments have available and this will be transferred to BBC micro software for school use. Contact between teachers and planners in the West Midlands is being forged following a number of meetings.

In the Tyneside area a thriving North East Environmental Education Forum is now operating. David Lovie of Town Teacher has assisted with a series of programmes on the conservation of the built environment, screened on BBC2 North. Meanwhile, planners at Abingdon continue to support the Vale of White Horse Environmental Education Group which has strong links with teachers through the Geographical Association and also embraces field studies.

In Hampshire a group of planners, architects, advisers, Community Programme Supervisors and other project leaders hold an environmental education liaison meeting twice a year. Television South (TVS) has pioneered a number of programmes on 'Action' for the environment, featuring the work of community groups, youth organisations, voluntary societies and local authorities in the south coast area, particularly the Greenspace Action Project of the Urban Fringe - itself a project initiated by planners.

The RTPI and Civic Trust are amongst those organisations which have advised on the content of the 'Design Matters' series on Channel 4. These programmes take design education into the arena of political issues, sharpened by the Government's increased emphasis on urban regeneration. ■

Historic Houses Association (HHA)

The Historic Houses Association represents the owners of 1300 historic houses and gardens. Many are actively involved in heritage education with programmes focusing on the properties themselves, their plants and gardens and the parkland, countryside and estate farms that surround them. The Association is keen to promote heritage education and both advises its members direct and supports and contributes to the Heritage Education Trust (HET), which administers the Sandford Award.

The Association feels that educational programmes for children have pioneered new techniques of interpretation with equal significance for adult education. With this in view, the HHA and HET co-operated in a major seminar in March '87 to introduce owners and administrators of historic houses and country house museums to new ideas and techniques of interpretation.

Two issues of the Association's quarterly magazine *Historic House* have covered relevant issues. The spring issue looked at heritage education projects on two highly successful sites, Buckfast Abbey and Holdenby House, and at education issues as seen by Devon County Council's Education Officer and a primary school teacher. The summer issue followed on from the seminar in considering interpretation themes and the techniques employed at Tatton Park.

In 1988 the HHA will continue actively to support the Heritage Education Trust. ■

Youth Hostels Association (YHA)

Objectives

The YHA is a registered charity, founded in 1930, to help all, especially young people of limited means, to a greater knowledge, love and care of the countryside, particularly by providing hostels for them in their travels and promoting their health, rest and education.

Major users

Of about 2 million overnight visits to the 260 youth hostels in England and Wales, about 50 per cent are by UK members, 25 per cent by overseas visitors and 25 per cent by youth and school groups.

Current changes

In a major effort to modernise the YHA and to make hostels even more enjoyable places to stay in, the YHA is currently involved in:

- a management and marketing re-orientation;
- re-organisation at national, regional and area management levels;
- implementation of a hostel or product development plan.

School, youth and community groups

Over 5000 groups use hostels in England and Wales each year. Schools form a major element of group visits, but a diversity of groups is encouraged.

Recent initiatives involvong non-school groups include the following:

- a block booking scheme at Castle Hedingham by Waltham Forest College of Further Education;
- close liaison with Sunderland TVEI to organise work experience placements at hostels;
- expansion of work with Police/Community Liaison projects for outdoor activities based at hostes;
- conferences and training courses for girls in the Na-

tional Association of Muslim Youth;

- British Youth Council conferences;
- extensive use of Edale Youth Hostel by YTS and CPVE courses;
- extensive contract bookings by Doncaster Youth Service;
- YHA Hill Walking Leadership Courses;
- well-subscribed teachers courses directed by YHA Development Officers.

These efforts are stimulated by many activities including the following:

- the Development Officers (7 in total) and the Group Business Development Section;
- publication and direct mailing of *Learning, Living and Leisure* and *Datapack*;
- greater marketing efforts at a local level;
- the combined efforts of many YHA staff and volunteers! ■

The Urban Spaces Scheme, Polytechnic of North London

The project has continued to assist and advise both primary and secondary schools in developing practical projects in environmental education across the curriculum. The Scheme's work in curriculum development has resulted in requests for resource materials from all parts of the country and from abroad. Support materials have been produced for practical modules for GCSE biology and geography courses, with schemes of assessment detailing specific skills which may be tested by each project.

Ecological analysis of school sites and advice on habitat creation and management has been provided for numerous schools in the North London area to help them develop environmental programmes of work. Additional work has included a project with the Holloway Prison Education Department and the planning of a garden for physically handicapped pupils in Enfield.

The USS Ecology Resource Centre in Hackney has continued to expand its services to schools. Development of projects with the Language Unit of the school in which the Centre is based will lead to the production of materials for children with learning difficulties. The Centre also works with the Hackney Urban Studies Centre and other Community Programme Projects in the Borough.

Over the past year the Scheme has run numerous workshops and courses for teachers. Three after-school courses for teachers in Enfield have been organized each term covering a range of environmental topics. Contributions to LEA and DES supported course have also been made both locally and nationally.

Over the year a number of new publications have been completed (details available on request). Work on several GCSE modules and 'Colour in the Environment' as well as a range of materials for the primary age group will be available in 1988.

Joint and co-operative projects with other organizations have included the development of a planning issues pack with the Lee Valley Park Authority (to be published in January 1988) and a *Directory of Ecological and Environmental Organisations*, supported by the British Ecological Society.

The Urban Spaces Project has been kitemarked under the UK 2000 initiative and it is expected that expansion into associated projects will develop. ■

City Discovery Centre - Milton Keynes

The City Discovery Centre is a new venture being developed at Bradwell Abbey. Planned over three years with Milton Keynes Development Corporation (MKDC), it is a major new concept in environmental education and leisure.

The Centre will offer a wide range of courses, conferences, talks and seminars encompassing urban studies, natural history, archaeology and countryside studies for all age groups. It will continue much of the present work of the Bradwell Abbey Field Centre, the Milton Keynes Urban Studies Centre and MKDC's Environmental Education Programme, all of which are merging to create the new project. (The Urban Studies Centre will move to Bradwell Abbey in the near future.)

The site at Bradwell Abbey will also become a major visitor attraction for both local people and tourists, telling the story of Milton Keynes through audio-visual displays and exhibitions. There will be nature and history trails, children's holiday events, adult evening classes on a wide range of subjects concerned with the environment, and the opportunity to get involved with an on-going archaeological dig on the priory remains, or the development of wildlife areas and gardens within the grounds of the Abbey.

Already a variety of voluntary societies use Bradwell Abbey as their base, and new groups will be welcome to affiliate to City Discovery Centre and make use to its wide-ranging facilities. These will include not only meeting rooms, offices, classroom and lecture theatre, computing and copying, but also full catering, a wine bar and a well stocked environmental shop and information desk.

The site is already well known to thousands of Milton Keynes inhabitants, with its medieval chapel and its Grade II listed farm buildings - a stunning location for the new Centre. A substantial improvements programme is about to start, restoring and converting the buildings. The newly appointed Director, Jonathan Hyams, is already in post. Full opening is planned for spring 1988. ■

Environmental education coordination in a local authority

Co-ordination of environmental education at a school or LEA level, though difficult, is often very rewarding and is becoming more common. Co-ordination across the whole authority is rarer but affords even greater potential. Paul Archer reports on the progress of an ambitious initiative in Birmingham.

Paul Archer

Formerly Head of Urban Base, City of Birmingham Education Department and now Curriculum Co-ordinator - Humanities, Birmingham Education Support Service

This report illustrates how a group of officers representing different city council departments have through working together realised the potential of a collaborative approach to environmental education, and how as a result those officers have proposed a coordinated strategy for assisting schools and colleges.

Before the 'City Council Departments Environmental Education Co-ordination Group' was formed I had already recognised the potential of such a group, having been at a focal point of separate negotiations with the different departments in my role as head of the LEA's resource and curriculum development centre for Environmental Education and Humanities (The Urban Base). What was not anticipated was the enthusiasm which would be generated in those departments which did not have the same traditions for being pro-active on environmental issues.

In September 1987 the Urban Base was absorbed within a new LEA structure of Education Support Services. My colleague Tony Sames (who takes on the liaison and project coordination for 'natural environment' biased enquiries), and myself (with a similar role for 'built environment' biased work) have established a considerable network of contacts in the voluntary and statutory sectors as well as with personnel in other City Departments and thus we have retained an environmental education overview. Such an overview is, I believe, an essential prerequisite for success with coordination. Another prerequisite is of course recognition of a flexible and dynamic definition of environmental education.

Should you be in the position of initiating inter-departmental coordination, then I would advise that if you are not sure of the scale of the activity relating to 'Education for the Environment' that is taking place independent of your Education Department, then start by assuming that it is probably many times greater than your upper estimates. Consider also the extent to which other departments may have greater experience of working with each other than they have of working with the Education Department. Also recognise that they may have negative expectations of initiatives which originate within the Education Department.

As the Urban Base had a long-standing and very productive relationship with the City Development Department, (many of whose members are also active within the regional Royal Town Planning Institute's Environmental Education Group), it was decided that the initiation of the coordination group should be made by them.

Setting up the Co-ordination Group

As the 'Local Plans Team' within the Development Department also had considerable experience of running in-service workshops for teachers, and of working alongside teachers developing course-work materials, they would also be able to encourage others through their example.

The first meeting of the Environmental Education Co-ordination Group took place in October 1986, with the agenda having being planned by Mark Middleton, the group's chairperson and myself. As Mark's letter to all Chief Officers inviting officers to attend had not specified the level within the organisation from which representatives might be drawn, we have since found that the group represents many different levels within Departmental hierarchies. This is a strength, as the membership is made up of those with a commitment to environmental education.

A round of introductions at the first meeting reminded us of the existing commitments, including the Recreation and Community Services Department's development of Country and Linear Parks, and of the extensive use made of these by students; of the Environmental Services' 'Operation Clean-up' team which includes a Theatre in Education group that tours city schools, of the funding of the West Midlands Environment Network (formerly Think Green) by the Development and Environmental Services Departments; of the team of teachers based within the City's Museums and Art Gallery; and so on. It also revealed initiatives that we had not known about involving the Housing Department, City Architects and City Engineers. It would indeed need a substantial report to include all that was going on, and indeed the contribution of the Education Department to environmental education could be interpreted as a minor one taken overall.

Our timing of the first

meeting came soon after the Director of Education had produced a policy document which identified 'Community Education' and 'Environment and Planning' as examples of 'Our Immediate Priorities'. It also came at a time when the introduction of GCSE was daily hitting the media headlines - and this gave me an opportunity to make a presentation on the implications of GCSE coursework requirements for Council Departments including the range of requests for help that Departments might receive from schools. This item was received well, and led to a commitment to anticipate requests by examining existing departmental resources. Significantly, my presentation included references to the environment taken from a very wide range of curriculum areas.

Mark Middleton was then able to suggest that all departments might produce a brief description of what services they could offer to schools along with the name of a contact person. Mark would collate the responses and produce a 'Guide to where to find... environmental information' that we might circulate to all schools. This ambitious proposal was implemented within a few months of the suggestion.

Achievements

In the year since the first meeting we have met formally seven times, and on each occasion identified new areas, for collaborative development. What is particularly satisfying is that we have found that our efforts have led to significant improvements in our involvement of teachers and students in issues of concern to the City.

Areas that have been developed include:

- establishing joint working parties of teachers with planners to produce GCSE project packs, and the inclusion of workshops within the Grant Related In-Service Training programme for teachers to trial these materials. (Samples of the Project Packs will be on sale to groups outside Birmingham in the near future.)
- implementing a programme of teacher 'Attachments to City Council Departments'. These have enabled teachers to spend up to fifteen days in each of the departments, evaluating the potential of the work of the departments for creating worthwhile learning experiences for students. Consider, for example, the potential of studying the economic importance and environmental impact of Birmingham's Street Superprix.
- a major schools competition sponsored by the Housing Department, which enabled students to express their ideas about the design of homes. A second exercise to consider alternative ways of spending £500 000 on improving an estate is about to be launched.
- a programme of site visits with City Engineers, including a visit to see a runway being resurfaced at Birmingham Airport, and another to go down a sewer.
- discussions of requests from voluntary organisations who wish to be involved with City projects, and a sharing of information on our relationships with this sector.
- the group has been able to support efforts to achieve better coordination of the work done in maintaining school sites and developing their educational potential.

By the time the group met for its third meeting, there was a realisation that coordination ought to be more systematically organised, so that the demands from schools for assistance in studying real issues within their neighbourhoods might be realistically met. The effects of the long running conditions of service dispute which teachers were having with the government, and the impending 'directed hours' made it clear at this time that students' coursework requirements would need to be met by increasing concentration on local fieldwork/ streetwork rather than reliance on residential field trips and day visits to distant environments.

Taking coordination further

Therefore I put forward a discussion document suggesting the establishment of a 'Centre for Environmental Education' that could be staffed by a multi-professional team. This centre could use the activities of the City Council Departments as a focus for student investigative work. As the emphasis would be on *activities which would take place from a student's own school*, the group decided to drop the word 'Centre', and redefine this suggestion in terms of an 'Environmental Awareness Unit'. The Coordination Group had considered the range of target groups and working practices for which the Unit could be responsible, and now decided to establish the level of support which might be obtained from our Chief Officers.

It was agreed that the Director of Education should be asked to write to all Chief Officers. As the replies indicated widespread support, and that our staffing targets were realistic, we then considered a range of alternative models which would enable a highly effective team to be established, with a minimum of disruption to existing departmental commitments, and to each individuals career profile.

What format could we arrive at that would enable us to attract high calibre and committed staff? Staff who would give us the opportunity to achieve our objective: 'to bring together as a multi-professional team able to coordinate and give direct assistance to projects initiated within separate departments, as well as developing strategies and resources that will enable students to experience real participation and gain understanding of the factors which influence environmental quality and community pride'.

To staff the Environmental Awareness Unit we envisaged three mini-teams:

1 The equivalent of three full-time posts seconded from council departments. (In practice this could be up to nine people each being 'block released' for fifteen weeks. One advantage of this model is that it allows departments more easily to contribute according to their size and level of existing environmental education provision. Even the small departments - eg housing - could make one secondment every two years.)

2 A team provided by the Education Department, made up of three teachers. (In practice this might be a Head of Unit/Project Co-ordinator on a three to five year secondment; an Advisory Teacher with a responsibility for the educational use of school grounds and other open spaces; and an Advisory Teacher capable of working alongside teachers in the organisation and delivery of school based fieldwork/ streetwork activities.)

3 A team to be a link with 'Education Workers' in the voluntary and community group sector. (In practice, the city already funds several posts in this category, and the Unit would enable them to have much closer communication with both the departments that they normally work with, and with the other departments.)

Where are we now?

The stage that the Co-ordination Group has reached with this proposal is that of seeking approval for a full feasibility study, in order to assess whether implementation can be achieved within existing budgets.

Such a study would itself be a major exercise, as no-one has a complete overview of the full range of existing initiatives. All that one can say is that there appears to be considerable duplication of effort within existing infrastructures. There is also a difficulty in that so much of that which is done (eg answering letters from students seeking help with individual studies), is being accomplished by many people

each giving up valuable hours. What is more, they may be researching answers that are then poorly matched to the individual's needs.

We anticipate that the value of the Unit will be not only that it enables us to cope with the daily demands from schools, but that it enables us to anticipate requirements. We may thus produce learning materials, and organise learning experiences so that - as our LEA's draft curriculum statement emphasises - 'the value of anything we learn in school lies in the extent to which it helps us to respond to the world around us', can be made a reality. This may be achieved by a recognition that the collective expertise and enthusiasm of professionals from all Council Departments is an invaluable source, something which I hope will become commonplace for many local authorities. ■

A School Strategy for environmental education

One school that has successfully adopted a coordinated cross-curricular approach to environmental education is Dyce Academy, Aberdeen. Stewart Philp, Carol Park, Jim Cameron and Raymond Jowett discuss possible strategies for environmental education and then explain the approach adopted at Dyce Academy.

Stewart Philp

Is the Co-ordinator and Carol Park, Jim Cameron and Raymond Jowett members of the environmental education team

This article considers those approaches to environmental education which we believe desirable and practicable in a secondary school. Such approaches have been clarified for us during the process of developing environmental education to the extent that it has become a permanent part of the curriculum in this school. Although we use the term 'approaches' for practical reasons, environmental education itself is in essence an approach to education and not a discrete subject. The three main approaches outlined in this article are the means by which environmental education may become established in the curriculum.

The following section indicates ways in which environmental education may already exist within the curriculum and the last section of the article shows how we have developed one of these approaches.

The approaches

Figure 1 shows three approaches to environmental education which are practicable in the secondary school curriculum.

Approach A is considered in detail in the second part of this article where the specific courses in environmental education offered by this school are outlined. There is no such discrete subject as environmental education, but we believe that by continuing to create specific courses in 'Environmental Education', a valuable focus of attention for both pupils and staff is created and hopefully the aims of environmental education are achieved. The courses thus help create a school ethos sympathetic to the aims of environmental education and the environment in general. In addition, specific courses in environmental education provide a means for integrating subject content in a direct and focused way. This enables pupils to see the relevance of and interrelationship between such knowledge, understanding and skills as they have already acquired through the traditional subject based curriculum.

Approach B This 'hidden curriculum' approach implies that environmental education permeates the work of all subject departments within a school to a greater or lesser extent. Environmental education is not the specific domain of any one of the subjects or groups of subjects into which knowledge is compartmentalised. Rather, it is an approach which transcends all subject boundaries and also the artificial boundaries created by the different stages of education. All education in some way seeks to improve our understanding of the environment whether it be physical, spatial, biological/ecological, economic, social, cultural, political or historical/developmental aspects of it. Demands for relevance in education are ever increasing, and many teachers now realise that using the environment makes learning much less abstract and more meaningful to young people.

As part of our work in researching the extent of environmental education within and across the curriculum in this school, we conducted a curriculum mapping exercise among the various subject departments. The volume of response to the basic question, 'What contribution does your department make to

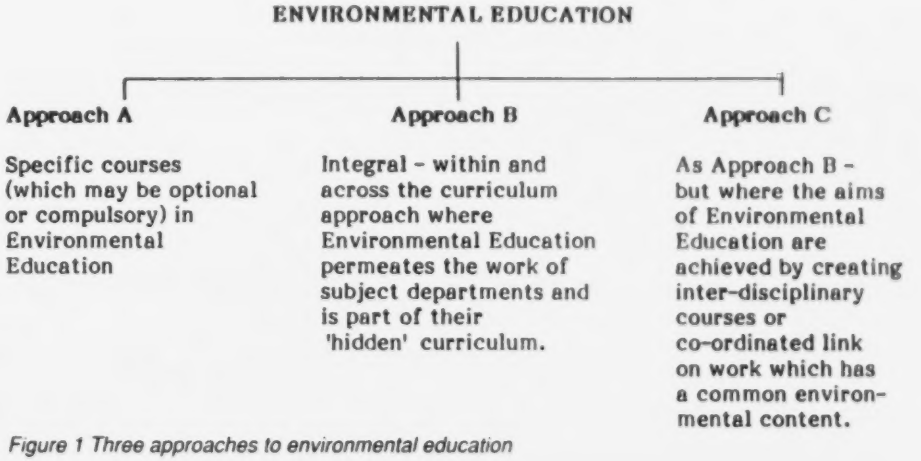
ENVIRONMENTAL EDUCATION
Approach A
Specific courses (which may be optional or compulsory) in Environmental Education
Approach B
Integral - within and across the curriculum approach where Environmental Education permeates the work of subject departments and is part of their 'hidden' curriculum.
Approach C
As Approach B - but where the aims of Environmental Education are achieved by creating inter-disciplinary courses or co-ordinated link on work which has a common environmental content.

Figure 1 Three approaches to environmental education

the environmental education of pupils?' suprised us, and it was interesting to note the content overlap between subjects and the different perspectives that pupils may experience on the same issue.

An unexpected but valuable result of our survey was that it seemed to focus staff awareness of environmental education - making subject experts really consider what they contribute to this essential area of education. Many who had initially been negative in their response came back later with some results or indeed some questions. So it seems that focusing staff awareness of the existence of environmental education may have increased the extent to which the school is achieving the aims of environmental education.

Increasing teachers' awareness of the specific aims of environmental education may enhance the way in which these aims not only permeate but are consciously applied throughout the whole school curriculum. Thus, as well as learning from and about the environment, our pupils will be learning for the environment through their various subjects.

Approach C The third approach to environmental education is similar to Approach B in that it seeks to achieve the aims of environmental education by permeation of the approach within discrete subjects. But it also takes this a stage further by creating inter-disciplinary courses or coordinated links between areas of work with a common environmental content. Our investigation of the extent of environmental education within the curriculum suggests that there are many areas in which links may be usefully developed. Coordination may simply involve making all departments aware of the course content and skills being used by other departments so that all teachers are aware of what their pupils will be experiencing elsewhere and can thus capitalise on the pupils' range of experience.

Such an approach is limited largely to those years and forms where all pupils experience a common course. In Scotland, this is normally S1 - S2 (12 - 14 years) as after this stage pupils choose which subjects to study. However, if coordination at S1 - S2 stage were to be developed it would form a solid base for development of an environmental ethos throughout the school.

These three approaches (A, B and C) to environmental education will work individually, but may be most successful if used simultaneously to create an overall school ethos sympathetic to the growing need for environmental awareness, concern and responsibility.

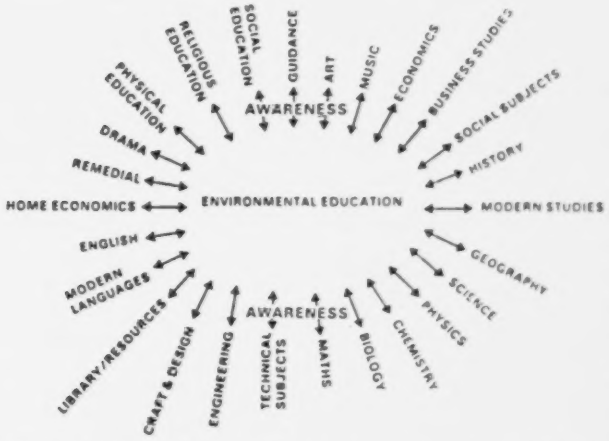

Figure 2 Focusing awareness of environmental education can have a positve impact on work of departments

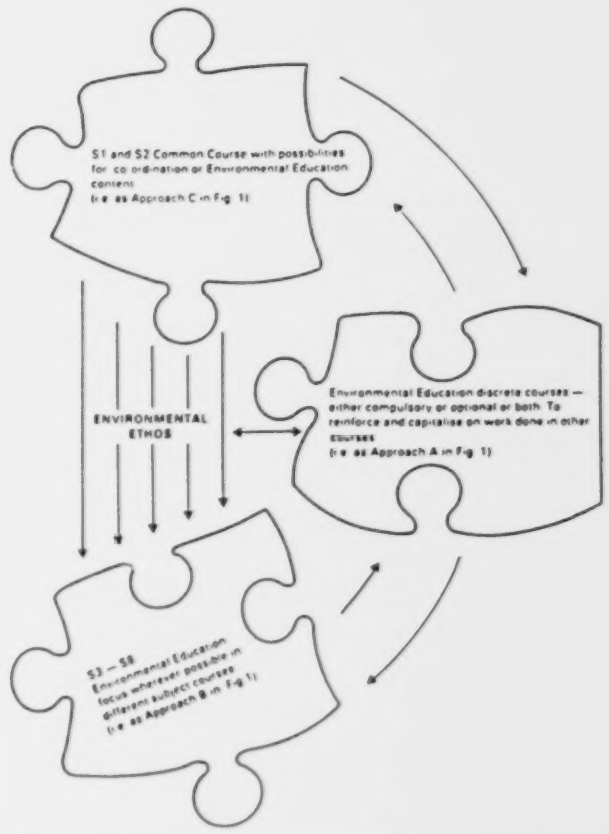
S1 and S2 Common Course with possibilities for co ordination of Environmental Education content
(i e as Approach C in Fig 1)
ENVIRONMENTAL ETHOS
Environmental Education discrete courses — either compulsory or optional or both To reinforce and capitalise on work done in other courses
(i e as Approach A in Fig 1)
S3 — S6
Environmental Education focus wherever possible in different subject courses
(i e as Approach B in Fig 1)

Figure 3 A possible model for environmental education in a secondary school.

Figure 3 shows a possible means of integrating these three approaches to create a model for environmental education in a secondary school. The fact that the pieces of the jigsaw do not fit perfectly together is a concession to those concerned with curriculum planning and management difficulties. A model such as this clearly requires a coordinator and team to organise it and make it work.

There are currently many demands being made in the area of curriculum development - courses, structures and methods of learning are undergoing or will undergo major change. The opportunity may be there to incorporate, whether implicitly or explicitly, the aims of environmental education in new or existing courses.

In suggesting our model we recognise that the major element of it is the creation of specific courses in 'Environmental Education' which provide a valuable focus for developing an environmental ethos and may in itself stimulate the development of the other two components of the model. The next section of this paper outlines how we have tackled this area of development.

Environmental education courses at Dyce Academy

After four years of development, Dyce Academy is in the position of being able to offer the following courses (specifically) in Environmental Education.

This is a short residential course at the start of S1 (August/September) held at Crathes Base Camp (hostel-type accommodation) and is designed for all pupils. It is aimed at being:

1 an *Induction* course - as an 'easing-in' and socialising process for all pupils;

Year	Optional/ Compulsory	Course length	Type of course
S1 (a)	C	2.5 days	Field course, also with an emphasis induction to secondary school
S1 (b)	O	5 days	Field course - intensive EE course
S2	O	20 weeks (1 period per week)	Urban Studies/Environmental monitoring
S3/4	C	10 weeks (1 period per week)	About half of the time is spent recieving information and the rest producing a piece of work

2 an *Environmental Fieldwork* course - developing both environmental philosophies and understanding, and field work practices.

These two aims are inter-related and mutually beneficial.

S1(b) Environmental Education Course

'Sunship Earth' is a week-long residential course which also takes place at Crathes Base Camp in May. Unlike the field course (see above) the participants are S1 pupils who *choose* to attend 'an Environmental Education course at Crathes'. The course is designed to promote environmental awareness and understanding, taking place in an out-of-school situation but contributing to the school curriculum. In contrast to the field course, it is primarily an Environmental Education course. The socialisation process, though important, is seen as having a secondary consideration.

Thus, hopefully, we have achieved some balance between the general 'all-comers' course and a specialised 'interested parties only' course.

S2 Environmental Education Option Course

Pupils in S2 follow a common core of subjects, eg maths, English, science , social subjects, but a small percentage of their time is spent on optional subjects. This means the pupils can choose two subjects - usually lasting 20 weeks, with 1 1/2 hours lesson time per week. Environmental Education is one of the options on offer.

Listed below are the aims of the S2 Optional Environmental Education course, as given to all pupils nearing the end of S1.

'This course provides an opportunity for pupils to find out about their environment in various ways.

The course aims are:

1 To increase pupils' awareness of their own environment, how it works and their place in it.

2 To do this by investigating specific topics which may vary, eg pollution or the local urban environment. Within these topics pupils can choose and develop their own areas of interest.

Throughout the course, pupils are involved in fieldwork in the local area; group work; individual research; discussion, decision-making and presenting their work.

The school is a member of the European Environmental Education Network and there may be contact with other schools in Europe.'

The activities of each group are managed by teachers whose formal subject or backgrounds differ widely. Specific background in environmental education has not been found necessary. However, the course content does vary considerably with each new 'intake' of pupils due to the emphasis on pupil centred/directed interests.

S3/4 Environmental Education Compulsory Course

During their third and fourth years at Dyce Academy, pupils must spend twenty-five per cent of their time (ie five periods a week) on non-examination courses. Of these, Religious Education, Moral Education, Physical Education and Guidance use up two periods per week and the remaining three periods per week are devoted to a wide range of short General Studies courses, some optional (two periods per week) and some compulsory (one period per week), but all lasting for about ten weeks at a time. As far as the compulsory General Studies courses are concerned, all pupils in S3/4 follow at some stage the courses on 'Computer Studies', 'Consumer Education', 'Government', 'Science in Society', 'Media Studies' and, since June 1984, 'Environmental Education'.

The inclusion of an Environmental Education course was a logical development from Dyce Academy's commitment to the environmental ethic and from the school's involvement in the EEC Environmental Education Secondary Network. The aims and objectives of the compulsory S3/S4 Environmental Education course are the same in essence as those for Environmental Education generally in Dyce Academy. The pupil handbook on General Studies courses includes the following on the Environmental Education course.

'There are two main aims:

1 To identify people's attitudes (pupils 'and other) and give an insight into a range of environmental issues and problems - from local to world scale.

2 To allow pupils to form their own opinions on the environment and on specific areas - after personal research, study and evaluation.

Throughout the course there is use of a variety of materials and AVA resources. There are teacher-directed studies based on the local area, looking at aspects of the physical, social and natural environment and possible solutions to some environmental problems. This involves practical and field-work where possible.

After that, pupils are involved in individual project work - identifying a particular topic or problem, doing their own research, formulating their own ideas and conclusions and then presenting it all to others.

This course seeks to make pupils more aware of the environment they live in - both local and global - and why and how to care for it. By including a large element of practical, out-of-school and individual work, it is hoped to encourage appreciation of the environment and an active interest in environmental issues, both now and in the future.'

It was always intended by the Environmental Education team at Dyce Academy that the pupils should direct at least part of the course themselves - in line with the S2 optional course. It soon became clear however, that it was necessary to provide some information at the start of the course if pupil-direction in the rest of the course was to be successful. This was hopefully achieved, at least to some extent, by the use of worksheets and AVA material specially produced by members of the Environmental Education team.

Evaluation of all the courses is an on-going task, therefore, after initial use of the original material, worksheets were evaluated and the course substantially altered. Our

second version, with minor modifications, is still in use.

Conclusion

After consideration of four years' work in the EEC Phase 2 Network and one year's work on dissemination of our experience, we wish to make the following points:

1 Environmental education is an integral and vital component in every school's curriculum but it needs development.

2 Environmental education should be seen as a cross-curricular and integrated development, even if developed as a discrete subject.

3 Developing environmental education encourages a natural growth of involvement and commitment by pupils and staff.

4 In whatever form it is developed, it should be done by establishing:
a) a philosophy - from whole school policy down to a particular course philosophy;
b) a structure - a planned overall structure for the development of the particular course;
c) methodologies, materials and resources developed to fit in with a) and b) above - not the other way round:
d) evaluation - of all the above factors after operation by the pupils and judgement of their responses.

5 'Keeping at it' is important in developing environmental education - problems are there to be solved, not as reasons or excuses for giving up - we know this to be true.

Reference

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Opinion and reflections

Thoughts after Moscow

Some of the issues raised at the UNESCO UNEP 'Tbilisi plus ten' conference held in August in Moscow, led Rupert Booth HMI to reflect on environmental education in the UK.

Rupert Booth
Her Majesty's Inspector with responsibility for Environmental Education

Recently (August 1987) a large scale conference on environmental education was held in Moscow organised jointly by UNESCO and UNEP. This was a follow-up to the Tbilisi conference ten years before at which very detailed recommendations were agreed. There was much rhetoric, but above all it was a meeting point for interested educators, environmentalists and environmental scientists from all parts of the world.

The major theme that emerged was the linking of ecology in its widest sense with economics. Statement after statement reiterated this; there was continual reference to sustainable use of resources and the need to live in harmony with the biosphere. The welcoming document from the USSR Council of Ministers clearly stated this but went further and linked these ideas with peace and disarmament. This was mirrored in many presentations not least that of a participant from a small Third World country who said that they could not afford to wage war and if they did it was resource hungry and tended to promote irreversible environmental change!

One speaker in an introductory address summed up a second theme when he said, 'In the long run nothing significant will happen to reduce local and international threats to the environment unless widespread public awareness is aroused concerning the essential links between environmental quality and the continued satisfaction of human needs. Human action depends upon motivation which depends upon widespread understanding. This is why we feel it is so important that everyone becomes environmentally conscious through proper environmental education'.

An analysis of the contributions to sessions reveals widespread activity in environmental education but a recognition that its introduction into the formal education system has often been difficult even when, as in Scandinavia, many Third World countries and the USSR, for example, there has been high level governmental support. The problems all countries face seem to be associated firstly with the introduction of a major new element which requires some reconsideration of the rationale behind the curriculum however tightly or loosely it is controlled. Secondly there is the special problem of the organisation and way of teaching required; there is much talk of cross-curricular work and multi-disciplinarity but less analysis of how this can actually work.

In the United Kingdom, the rationale behind both national and local authority statements is supportive to environmental education. The English inspectorate discussion document on the curriculum 5-16 identifies it as a cross-curricular aspect which must be addressed by schools; the DES consultative document on a national curriculum also stresses the importance of cross-curricular themes. The key question in England and elsewhere is what actually happens during a time when interest and action in this field of education are quickening? Some assessment of this in Britain is given below; it seems to parallel what is going on in the rest of the world.

Practice in schools

When children start to go to school whether in nursery or

infant school, they already have environmental experience. Ideally and characteristically this will be broadened and the school, its grounds, building and population can be used to have a profound effect on learning. Activities such as working with soil, digging leaf mould into it, growing plants and helping with decision making about this, using local clay to make pots, bringing pupils into dialogue with people who come into school to undertake building or maintenance work, lay a foundation for a local type of citizenship and bring pupils towards understanding of culture, past and present. Further interest can be stimulated by visit to parks, streets, shops, churches, farms, police and fire stations. Curiosity is aroused. Often activity is indiscriminate and there is isolated observation of objects, events and phenomena and learning of the vocabulary needed to communicate about them. Skillful teaching uses this experience to increase understanding of places, materials, people and living things, helps pupils to communicate about these and as they become able to do so, start investigating and look for interrelationships.

Objective thought leads logically to the recognition of the centrality of personal, social, and environmental education

In the junior school experience widens, its interpretation becomes more coherent as skills develop, and a clearer understanding emerges. At best observation in field and town, near and far, leads to questioning, investigation and some synthesis of ideas. The skills and content of a range of subject areas (science, technology, history, geography, religious education, mathematics) become important in investigation. Those of language, art, drama and music help pupils to discuss their ideas, and express them both objectively and emotionally. They also provide access to other peoples' responses. A feature of what seems to be the best learning is the full involvement of pupils and ideas and perceptions at all stages; in Moscow it was apparent that there is worldwide agreement on this.

Crucial to all the work in the early years and later is the planning of experience and learning so that it is progressive, is well resourced (in terms of places, expert and lay people, documentation) and is not trivial in nature. Particularly important is the relationship between broadly based work in field and classroom and the subjects of the curriculum. The best of our primary schools have developed ways of combining such broadly based work with specialised study in such a way that they both contribute with some precision to the attainment of carefully defined objectives of both subjects and the whole curriculum. But it is no easy matter. It is also apparent that primary school pupils can gain some insight into the procedures used for making environmental decisions including consideration of the means people have for expressing views and the power they have in decision making. The youngest pupils have ideas about how they would like their environment to be. As they get older they identify themselves as an active part of the environment, understand they depend on it and therefore have some responsibility for it. Many are able to see that their surroundings are not as they are by chance and to look critically at the results of decisions made. They can be led to have a personal view about environmental management based on their increasing level of understanding.

The curriculum of secondary schools is traditionally subject based. There is however a welcome trend towards a proper consideration of the outcomes of the curriculum as a whole. One promising way of looking at this involves the use of the work within subjects and the resources they provide in terms of skills and understanding to help in broadly based environmental activity. These in turn, along with field work locally and further afield (sometimes overseas), contribute to learning and relevance within subjects. Both subjects and cross-curricular activities lead to the attainment of major outcomes such as the development of informed citizenship.

Proliferation of 'educations'

A major difficulty facing schools is the proliferation of 'adjectival educations' (health, economic, careers, industrial, development) which are cross-curricular in nature. The list can be daunting until it is realised that the means of achieving what is required is largely already there within subjects. There are also major overlaps amongst these aspects of the curriculum. In the view of the writer it is worth exploring the idea that the synthesis of these elements from subjects, fieldwork, and multidisciplinary activity can be achieved within curriculum time under the heading of personal, social and environmental education. The name is less important than the idea that things like health, politics, the world of work and others are all interrelated, but, more importantly, need to be dealt with, partly at a personal level, but also at local community levels and in national and global contexts. A participant in Moscow drew attention to the fact that 'adjectival educators' always thought of their field as the most important one. However careful objective thought leads logically to the recognition of the centrality of personal, social, and environmental education. Good organisation should ensure a proper balance of outcomes.

Organisation

An essential feature of such organisation is flexibility. A set time each week for the work may be less useful than a longer block of time to start something off which is followed up in subjects for a week or two and followed by a multidisciplinary synthesis session with a range of specialist teachers available. There are other ways of doing things but flexibility is always helpful. For example the political element will sometimes arise from an environmental issue, sometimes from a subject like history, or may need a module of time all to itself. Flexible use of teachers and time can again help. The other most important issue is that of careful planning in which it is clear what is going to be done, when, by whom and where, and with what out of/in school resources. What has been suggested here requires real and detailed communication between those involved. When it is also realised that all will go better if the students play a part in the planning and that reaction to their responses is crucial the need for a planned framework related to outcomes becomes even more apparent.

What is suggested here is not to devalue the cross-curricular aspects but a rationale for taking account of them all. Specialised expertise in each aspect, advice, curriculum development and resources are particularly important and will be more important than if each cross-curricular aspect is dealt with in isolation. The main issue to be faced is that of multidisciplinarity (there is some doubt that integration is ever achieved) and some thoughts about this have been exercised. The strategy for worldwide environmental education which emerges from the Moscow conference is likely to stress the need for experiment in this area and exchange of ideas.

Another matter discussed in Moscow was that of the need within vocational training at all levels to include consideration of the environmental significance of the specific industries and trades involved. In the United Kingdom, this is

regarded as an ideal which would be worth achieving. There is no formal requirement to do so but many courses in, for example, agriculture, catering, those related to the management of leisure facilities and sometimes in engineering, try through project or general work to put the training in context both environmentally and in terms of economics; much depends on detailed course design and the attitudes and nature of the lecturers.

Conclusions

We have wandered in to speculation and reality but must remind ourselves that the relationship between ecology and economy and perhaps conflict and peace should remind us that environmental education is about environmental concern and, wherever and at whatever stage it takes place, it faces pupils with difficult questions of commitment and action. They should bring to the study of controversial issues a respect for evidence, wariness in its use, understanding of others' concerns and a growing realisation that environmental issues are rarely clear cut. Environmental issues may be of genuine personal concern to their students and can act as a useful means of exploring moral, social and political values.

In general there is considerable growth in environmental education in Britain. Enthusiasts abound, young people thrive on involvement in it and are interested. They show responsible concern when given the chance and are keen to take action when they feel it is necessary. The Moscow conference showed that there is worldwide interest and called for more development and exchange of ideas. British environmental educators can learn from the rest of the world and, it is to be hoped, can make some contribution themselves.

*This article was also written for **'Conservation'** published by the Conservation Trust, and first appeared in that journal in October 1987.* ■

Reflections on a trip down under

John Huckle oulines a prescription for radical environmental education in Australia which has implications for the UK.

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In 1988, many Australians will celebrate two hundred years of European settlement. In that time, half of the continent's topsoil has gone, two thirds of the forest has been destroyed, three quarters of the rainforests have been felled, and there has been a drastic decline in Australia's genetic resource base[1]. Within two hundred years, the ecologically sustainable way of life of the aborigine, organised for mutual aid and protection, has been largely replaced by one which plunders the environment for the sake of commodity production and private gain[2].

The approaching bicentennial has focused the attention of concerned Australians on the plight of aboriginals and the condition of the land. The Hawke Government has hastily drawn up a treaty on land rights and there is an awakening of green politics comparable to that in Europe[3]. 'Greenies' oppose such developments as uranium mining and wood chipping, and seek to conserve Australia's remaining wilderness areas. Their campaigns focus attention on the nature of dependent development in a client state on the semi-periphery of the world economy. Primary production remains the largest sector of the Australian economy, foreign ownership is high, and 'the lucky country' risks becoming a mere supplier of raw materials and market for manufactured goods, on the edge of the new Pacific. In response to a worsening economic situation, a Labour government has imposed monetarist policies and austerity. While one in five Australian children now live in poverty, a 'millionaire huckster class' has risen to considerable power as a result of overseas borrowings and tax privileges[4]. Despite the rhetoric of such documents as the *National Conservation Strategy for Australia*, the realities of Australia's political economy mean that it is ever more difficult to achieve sustainable development via consensus.

If we are to understand environmental issues in Australia or elsewhere, it is then necessary to consider underlying political economy. A prime goal for environmental education should be to develop pupils' environmental citizenship or their ability to understand, participate in, and criticise the social processes shaping our use of nature and construction of our environment. Among the talks I gave during a trip to Australia in 1986 was one suggesting what the components of such environmental citizenship might be. They will be outlined here and followed by some related comments on environmental education in Australia. In the outline, the original references to Australia will be maintained, but the reader might like to consider what these components of environmental citizenship might entail in a UK context.

The eight components of environmental citizenship

Environmental education which seeks to develop environmental citizenship has the following components:

1 Knowledge of the natural environment and its potential for human use

We should teach about Australia's major ecological systems, the processes which sustain them, and their vulnerability to human modification

2 A sense of history and a knowledge of the impact of changing social formations on the environment

Students should understand how the sustainable economy of the aborigine was replaced by that of the European colonist, how separate colonies merged to form a Commonwealth, and how a form of state capitalism developed to enabled rapid accumulation and entry into the semi-periphery of the world economy. They should be aware of the impact of changing social formations on nature and the forms of landscape and environment which characterized each stage.

3 An awareness of class conflict

As nature is transformed by a changing society, there are generally winners and losers. Throughout recent history, rich and poor Australians have shared unequally in the gains from past and present use of nature, in control over economic development, and in the costs of ecological disruption and environmental protection efforts. The ordinary people have frequently challenged the logic and costs of development under prevailing social relations, and their struggles

deserve a place in the curriculum. Australian workers won some of the earliest controls over the working environment and were amongst the first to impose 'green bans' on environmentally damaging production and development.

4 Political literacy
Pupils should acquire the ability to understand, participate in, and criticise, the political life of the state. The Australian state came into existence to manage the affairs of the dominant class within a particular part of the world, and its core functions today are those of assisting capital accumulation and legitimating the prevailing economic and political order. National and state governments manage class conflict by means of liberal democracy and while conflicts over the environment have brought a growing number of controls, these do not yet amount to a coherent environmental policy nor do they substantially challenge the interests of capital as a whole.

Our students need the knowledge, skills and attitudes which will enable them to understand and participate in environmental politics. In addition to a basic knowledge of relevant government agencies and their powers, they should also explore the composite nature of the environmental movement, its links with political parties, and the strategies it employs to affect government decisions. Case studies of environmental issues such as wood chipping, and participation in environmental campaigns, such as that surrounding the future use of Antarctica, are valid means whereby older pupils can develop political literacy.

In developing pupils' political literacy, teachers should seek to cultivate constructive scepticism. They should develop the pupils' ability to use and evaluate alternative kinds of social and political theory and recognise and handle bias. In the case of Australia, such scepticism might include the realisation that, in a state undergoing development dependent on outside influences, national politicians have declining power to protect the environment. They must continually balance the need to conserve resources, reduce pollution and improve people's environmental well-being, against the need to revive the economy by encouraging yet more investment with environmentally damaging consequences.

5 Awareness of alternative environmental futures for Australia and the political strategies whereby they are likely to be realised
In addition to the 'business as usual' scenario, which sees Australia further integrated into the rising economy of the Pacific Basin, pupils should be introduced to a 'conserver-orientated' or ecosocialist strategy for Australia. This would involve a different kind of development, designed to encourage socially useful and ecologically sustainable production, maximise self-reliance and human welfare, reduce the rate of resource exploitation and create satisfying employment using appropriate technology. Debate between 'Reds' and 'Greens' has developed the theory and practice of such a future for Australia with writers such as Hugh Stretton, Alan Roberts and Ted Trainer providing many useful ideas. While it will be strongly resisted by those with a high stake in current social realities, the critical examination of such social alternatives in schools is at the very heart of education for democracy.

In what often appears a hedonistic and politically apathetic society, education has a role in alerting young people to the social and environmental costs of the products and services they consume

6 An understanding of the political function of ideology and consumer lifestyles
European settlement of Australia was partly legitimated by a frontier mentality which set people above nature and encompassed particular Western views of progress and development. A cavalier and male dominated attitude to nature still pervades much environmental politics, enables environmentalists to be attacked as anti-progress, and continues to influence what is taught in schools. While it is increasingly challenged by other ideas, the main way in which young Australians learn environmental attitudes is through their everyday lives. A consumer society teaches them that happiness comes from more and more individualised consumption of ever more wasteful products. It buys the majority into the system, will later keep them working on the treadmill of production, and will offer ultimately false compensations for the alienation and powerlessness they will feel.

In what often appears a hedonistic and politically apathetic society, education has a role in alerting young people to the social and environmental costs of the products and services they consume. In a global economy, these costs are often paid by people thousands of miles away. The catch phrase 'think globally, act locally' has particular meaning in the context of education for environmental citizenship.

7 Involvement in real issues
Environmental citizenship can really only be learnt through action. Students should become involved in the environmental issues affecting their communities and in Australia the network of Environment Centres offers growing possibilities.

8 Tentativeness and Optimism
Unless we seek to indoctrinate, we have no right as teachers to provide students with 'correct' or 'easy' answers. Nor do we have the right to limit the nature of the topics and ideas we explore through environmental education. While we should be commited to justice, rationality and democracy, rather than to a form of neutrality which leaves existing patterns of power and privilege undisturbed, we should protect students from our own powers of persuasion and cultivate tentativeness as a necessary part of political literacy. That scepticism and openness now associated with Crocodile Dundee should be much admired.

Optimism is necessary in today's world where students are easily overwhelmed by the world's problems. We should build environmental success stories into our curriculum and develop awareness of resources for hope. The popularity of the group 'Midnight Oil' is one sign that Australia's young people are not yet ready to give up their vision of a fairer and better world.

Environmental Education in Australia

I have set out my perceptions of environmental education in Australia at some length elsewhere[5]. For the moment I will focus on just three lasting impressions.

Firstly, while there are clear parallels between the Australian and UK experience, environmental education in Australia has not suffered the marked decline in advocacy and support seen in Britain since the mid 1970's. There remains real support from federal government and many state governments are currently issuing curriculum guidelines. Teachers' morale and status is significantly higher than in Britain and there is much useful curriculum development at local level.

Secondly, there appears to be a growing dialogue between environmental, social and development educators. Best developed in Victoria, this dialogue could ensure that the political economy of the environment and education is not neglected as it has been, in both Britain and Australia, in the past. The work of Ted Trainer and the Social Literacy

project in Sydney , Canberra Environment Centre, Victoria's Social Education Centre, and Warrandyte South Primary School in South Australia, all repay study.

Thirdly, as in Britain, there have been few recent attempts to extend the theory of environmental education. New writing on environmental philosophy and politics has not been integrated with that on schooling and the curriculum and few environmental educators have forged strong links with the wider environmental movement. In both countries, radical education for the environment does however remain better represented in theory than in practice. As environmental and social problems intensify in both countries, one wonders just how long that will remain the case.

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Educational developments affecting environmental education

The National Curriculum 5-16 - threat or promise?

Ewan Mc Leish looks for positive elements in the National Curriculum proposals in relation to environmental education, but is left with some misgivings.

Dr Ewan McLeish

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Short of a long term posting to the Siberian archipelago, it has been difficult to escape the reverberations of the consultation document that hit a few thousand doormats in July and August. The Government's *The National Curriculum 5-16* sets out its stall in relation to formal education for all children of compulsory schooling age. The result has been almost unprecedented interest from a vast array of organisations and individuals from within and outside the education sector, not least of which has been the media. As the (original) cut-off date of September 30th approached, responses flooded into the Department of Education and Science at the rate of hundreds per day. It was something of an anti-climax (though nonetheless significant) when a stay of execution was announced and the consultation period extended.

Among the responses was one from CEE[1] and it is not the purpose of this article to reproduce what it contained - although inevitably it will contain references to it. That response attempted to draw attention to the possible implications for environmental education of the Government's proposals, and for related and overlapping areas such as development and health education. This article attempts to look at some of the broader implications of the document and at the reaction it has produced.

'...successive Secretaries of State have aimed to achieve agreement with their partners in the education service on policies for the school curriculum which will develop the potential of all pupils and equip them for the responsibilities of citizenship and for the challenges of employment in tomorrow's world.'[2]

'It is a characteristic of the totalitarian society that allows no rivals to state orthodoxy. It abolishes all centres of independent responsibility and allows nothing to be done without approval. Education works best when people are treated as individuals; it recognises individual talent.'[3]

Two strongly contrasting views of the National Curriculum proposals, the former - predictably - from the consultation document itself, the latter - equally predictably - not. To an extent, there is confusion, or at least a difference of opinion, over the terminology used. It would be hard to argue against a school system which developed the potential of all pupils or which equipped them for the responsibilities of citizenship. But, as a well-known radio personality used to say, 'it all depends what you mean by' in this case, potential, and responsibilities of citizenship. The final clarion call 'for the challenges of employment in tomorrow's world' appears less equivocal yet the challenges of finding employment in tomorrow's world are not mentioned.

It is easy to be an armchair

cynic, but the use of terminology is important - and the consultation document is conspicuously sloppy in this respect. The familiar words of paragraph 7 of the document, that the curriculum should equip pupils' with the knowledge, skills and understanding that they need for adult life and employment' is a case in point. CEE's response pointed out that 'understanding must relate to the issues that underlie what (pupils) learn, as well as to the processes and structures by which things function'. Equally, understanding should be related to 'the interrelatedness among humans, their culture, and biophysical surroundings'[4] and to the concept of using resources sustainably . It all depends on what you mean by understanding.

To be positive, few doubt the Government's sincerity in wishing to (and their duty) to improve education. The concept of the national curriculum is widely supported [5], although the mechanisms of its delivery are disputed and the majority of organisations and individuals within the formal education sector appear to find the present proposals difficult to accept unmodified. Hopefully, that is what the consultation period is about. From an environmental education point of view, CEE - and a number of member and other organisations - have laid emphasis on a small number of statements which recognise 'relevance to and links with pupils' own experiences' (paragraph 8iii), which encourage pupils to 'become thinking and informed people' (paragraph 23), and which refer to the development of personal qualities (paragraphs 23 and 68). Within these - almost throw-away - statements are the seeds of environmental education and global awareness.

More than anything else, however, the environmental organisations have literally seized on one paragraph early in the document, and a number of qualifying statements made later. It is paragraph 18, and it states,

'In addition, there are a number of subjects on themes (my emphasis) such as health education..., which can be taught through other subjects... It is proposed that such subjects or themes should be taught through the foundation subjects...'

Given the fact that nowhere does the document mention environmental education (or urban studies, or development education, or world studies for that matter), this paragraph must be the life-line to which many in the field will cling. The omission of any mention of an environmental dimension is, of course, profoundly regrettable, particularly in view of successive government's gestures and statements of support (see 1). Just one reference would have been sufficient to quell many fears and give encouragement and, more importantly, provide a footing on which present and future work may be built.

In the absence of such inclusion, educators must be content with, and exploit, the reference to cross-curricular teaching that paragraph 18 implies. The example, 'biology can contribute to learning about health education, and the health theme will give an added dimension to teaching about biology' , is valuable because it states the reciprocal benefit of a subject and theme; something which has always been a central tenet of environmental education. In this context, the absence of reference to the environment is perhaps less discouraging; the principle that themes can enhance other subjects while being taught through them, has been recognised. The rather mean caveat to paragraph 18, 'but without crowding out the essential subjects,' seems unnecessary, if not actually giving the lie to what had gone before. Perhaps, having made such a heady concession, the government needed to reaffirm control.

What can be achieved through a cross-curricular approach must be necessarily limited without a high level of co-operation and co-ordination. And in this respect the proposals are sadly lacking. Apart from a fleeting reference to limited liaison in the primary phase (paragraph 71), reference to co-ordination tends to be in terms of yearly succession (nonetheless important) rather than between disciplines and areas of learning (paragraph 27).

The principle that themes can enhance other subjects while being taught through them, has been recognised

The Subject Working Groups (SWG's) (paragraph 68) set up to describe the content of Foundation subjects both reinforce and ameliorate this view. The fact that the Working Groups have been and will be set up primarily in order to lay down attainment criteria (paragraph 12) will inevitably mean they will focus on their own particular subjects. They can hardly afford to do anything else. Coupled with the fact that many of the SWG's will be discontinuous in time, again means that little cross-consultation might be expected to take place. Against this, however, there are a number of encouraging (admittedly appendixed) references to 'regard being given to the work of the Working Groups' and other more general statements about cross-curricular work (Annex A paragraph 3). It can only remain to be seen how these difficulties and intentions will be reconciled and the position of primary education, with its excellent record of learning through project and cross-curricular work, must be seen as particularly worrying in this context. Nevertheless, the Subject Working Groups must remain one of the keys to the co-ordination and to the possibility of establishing environmental content across the curriculum. To this end CEE has offered itself through its membership, to be represented on these Groups.

CEE's response to *National Curriculum 5-16* concentrated, properly, on the opportunities (for they are there) and implications for environmental education. It alluded to the importance of complementary themes such as development education. Perhaps the need to clarify and restate the links between these and other related themes is now more urgent than ever. An attempt has been made in WWF's and Global Impact's publication, *Earthrights - Education as if the planet really mattered*. The National Curriculum debate is an opportunity for all those involved in the many facets of developing environmental awareness to co-ordinate and complement their respective viewpoints. If they do not, it is likely that the 'environmental' response will lose the power and urgency of its message.

But there is another aspect to the proposals that, though strictly outside the immediate remit of environmental education, ultimately must concern it. Apart from the instigation of core and foundation subjects, it is the most fundamental element of the proposals. It concerns national criteria and the testing of attainment. It is not an exaggeration to say that the greater proportion of the consultation document is taken up with implementing systems for measuring levels of attainment. The document states that attainment targets will provide 'standards against which pupils' progress and performance can be assessed' (paragraph 28). 'The main purpose of such assessment will be to show what a pupil has learnt and mastered.' 'At the heart of the assessment process there will be nationally prescribed tests' (paragraph 29), and so on. It is hard to escape the conclusion that such an emphasis on testing will only reveal what is readily testable - some knowledge, certainly; some skills, proba-

bly; some understanding, perhaps. They cannot assess the extent to which a pupil has developed an appreciation of his or her surroundings, an understanding of and tolerance to the views of others, a spirit of co-operation rather than competition, the vision to work for goals not immediately related to material success. Nor should such tests assess such things. The danger is, of course, that the tail will begin to wag the proverbial dog. The tests will become ends in themselves and so teaching becomes geared completely to them. Couple this with statements like 'they (parents) also need to know how the pupil has *performed against the attainment targets* (my emphasis), and by comparison with the range of marks achieved by pupils in his or her own class.' (paragraph 36(i)). Similar conditions apply to schools themselves, 'parents, governing bodies, and the local community should know what a school's assessment and examination results indicate about *performance* (my emphasis) and how they compare with those of other schools within the LEA or neighbourhood' (paragraph 36 iii). It is difficult to escape the conclusion of the *TES*[7], 'The National Curriculum and its associated testing is designed to focus public discontent on individual schools and teachers. There will inevitably be a league table of schools, but there will be no statistical method for relating input (ability and aptitudes of students) to output (the test results)'.

The *TES* again[8] - 'Not all pupils benefit from the traditional academic subjects, but it is not apparent what these children will be offered. The intention seems to be to neaten things up rather than recognise diversity in students'. Diversity has always been a key concept, first in ecology and then in broader environmental terms. It should be so in education. The health and future of the environment (the planet) depends on lively and enquiring minds bringing new and different ideas and perceptions to bear on environmental problems and issues. It also demands a generation who have the capacity to make reasoned decisions about their surroundings; decisions which are based on values and attitudes derived from concern about themselves and others, and an understanding of our position in the scheme of things - 'the interrelatedness among humans; their culture, and biophysical surroundings'[4]. Education demands all of this; the National Curriculum proposals can be seen as a block to 'Education as if the planet really mattered,' or as a vehicle through which the co-ordinated and cross-curricular approach can be negotiated. In a way, environmental education will succeed because it is too important not to. It would just have been nice if *The National Curriculum 5-16* had given it a bit more to hang onto.

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[8] From an article by Alan Dyson, *Times Educational Supplement*, 4 September, 1987. ■

The Local Authority Training Grants Scheme (GRIST) and the implications for environmental education

Chris Gayford outlines the features of GRIST and discusses the overall implications for environmental education, particularly as they affect the role of voluntary organisations in relation to in-service training.

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The background to this scheme is that in August 1986 the Secretary of State announced his decision to improve the quality of teaching and facilitate the professional development of teachers. This initiative is outlined in Circular 6/86 and the new professional in-service training has been given the acronym 'GRIST', ie Grant-Related In-Service Training. The scheme is intended to help local authorities organise in-service training more systematically in order to meet national and local priorities and needs. On 1 April 1987, GRIST replaced the local authority pooling arrangements for in-service training, the specific grant schemes and the TRIST (TVEI-related) scheme. It is a new approach to the distribution of central funds for these purposes.

The aims and priorities of GRIST

The present innovation is an attempt to rationalise what had become a disparate approach to a central issue in education. Whether or not there is more or less money available for in-service work is a matter for lengthy discussion depending on many factors which will not be pursued here.

The main purposes of the new scheme are to:

1 promote professional development of teachers;

2 promote more systematic and purposeful planning of in-service training;

3 encourage more effective management of the teaching force;

4 encourage training in selected areas which are identified as national priorities.

Previous schemes emphasised the secondary sector and tended to underprovide for primary education, special education and non-formal education. GRIST will support training of certain kinds in specified ways. Expenditure by local authorities from central funds will be eligible for grant aid as follows:

1 training in relation to nominated priority areas, which will receive a support grant of 70 per cent;

2 training in relation to agreed locally assessed needs and priorities which will be supported by a grant of 50 per cent.

The nineteen specified national priority areas for 1987/88 may be summarised as follows - training in the areas of:

Schools

1 Organisation and management for head teachers and senior teachers.

2 The teaching of mathematics.

3 The special educational needs of pupils with learning difficulties in schools.

4 Industry, the economy and the world of work.

5 The teaching of science.

6 The teaching of craft, design and technology (CDT).

7 The teaching and planning of the curriculum in a multi-ethnic society.

8 The teaching of microelectronics and its uses across the curriculum.

9 The teaching of religious education.

Further Education

10 Industry, the economy and the world of work.

11 Development and competence in the teaching of technical, commercial or professional subjects in the light of recent developments in industry, commerce and the professions.

12 Organisation and management for teachers in further education.

13 The special educational needs of further education students with learning difficulties.

14 Teachers engaged in provision of advanced further education (AFE) in polytechnic and other institutions.

15 The teaching of microelectronics and its uses across the curriculum.

School and Further Education Teachers

16 Specific training for GCSE. School and Further Education Teachers and Youth and Community Workers

17 Combat the misuse of drugs.

18 For youth and community workers.

19 Educational psychologists.

From this it can be seen that the training of youth and community workers, full-time, part-time or volunteers in the statutory or voluntary youth service are all included in a coherent scheme. Also, that environmental education is not specifically mentioned.

The list of those who are eligible for INSET is fairly extensive but for the purposes of this discussion we should focus on the following five groups:

1 Full time and part-time teachers in schools, further education, higher education and adult education.

2 Qualified teachers, whether or not they are currently employed as such.

3 Initial and further training as teachers of people who do not have qualified teacher status but who are employed as teachers by LEA's, aided schools, LEA assisted institutions of further education, higher education or adult education.

4 Training of qualified teachers as youth and community workers.

5 Initial and further training of those employed as youth and community workers who are working to discharge a statutory function. This includes people working in leisure time facilities which the local authority has an obligation to provide.

The locally agreed needs and priorities have been drawn up for the first round after considerable consultation throughout the individual local authorities and these have been submitted to the DES for approval. After considering the proposals for training in the financial year 1987/88 the Secretary of State has allocated the grant. Each authority has received a grant allocation for its local needs and priorities and separate grant allocations for each national priority area. Arrangements for virement are specified but not limited.

Further aspects

Further important aspects of GRIST are that:

1 Proposals are encouraged from schools and institutions derived from their own perceptions of their in-service training (INSET) needs. This is based on the notion that the institutions and teachers should influence and have responsibility for their own in-service development. Money is given to schools for INSET purposes.

2 The perceived local needs will differ from one local authority to another.

3 There is more opportunity for central government to monitor and influence programmes in line with stated national priorities.

4 Evaluation and monitoring, both external and self-evaluation, constitute an important part of the scheme.

Local authorities are expected to set up their own clearly thought out management strategies. Usually this involves a central co-ordinator with a committee set up to advise the Chief Education Officer. Schools and colleges will usually be asked to nominate a professional development co-ordinator from their own staff, who will work with a professional development group to identify the needs of the staff in the institution.

The programme planned by individual local authorities therefore must be based on a threefold principle, of National Priority Areas, Perceived Local Needs and the particular Local Education Authority Policy. From these a coherent programme with priorities is devised, often in a way where the three are interwoven together. An example of how this may be achieved is summarised in the following diagram:

Individual local authorities are also expected to investigate joint ventures with other, probably adjacent local authorities, in order to obtain the best and most appropriate expertise for their in-service programmes. Training programmes may be brought

in by local authorities to supplement available resources and to provide for local or national needs.

Eligible expenditure for grant aid will be:

1 Tuition fees at residential and other colleges.

2 Travelling, subsidies and other incidental expenses.

3 Payment of replacement personnel for those undergoing training costs of evaluation.

4 Costs of evaluation.

5 Part of the salary costs of advisers/inspectors and others involved in planning, monitoring, co-ordinating or evaluating.

6 Where training of youth and community workers is involved expenditure may include costs incurred by voluntary organisations.

An important aspect of the GRIST initiative in relation to expenditure is the recognition of the need to give opportunities for release to staff to pursue professional training in normal working time. Consequently, replacement staff who are properly paid for doing the job are an essential part of the scheme. It is recognised that for too long in the past there has been the expectation that teachers' goodwill will motivate them to undertake their own training and development. Now it is accepted that for a planned, sustained programme which will affect all relevant people in education, goodwill of this kind will be inadequate. Of course, those motivated teachers who wish to contribute to their own development in their own time and at their own expense by attending courses or other activities will be encouraged to do so and a record will be kept by each local authority so that an overall picture is maintained.

The implications for environmental education and the role of voluntary organisations

GRIST is now well into the first cycle and while certain patterns are likely to become established for the future it is also likely that changes can be implemented if appropriate and persuasive approaches are made to specific institutions and local authorities. GRIST has required the teaching and allied agencies to move quickly particularly in the wake of GCSE developments. There is no doubt that if serving teachers are to be influenced in the future the GRIST programmes will probably be a very suitable avenue. It is therefore essential that those with concern for environmental education consider the implications and act accordingly.

The introduction of the Local Authority Training Grant Scheme must also now be viewed against the background of the proposed National Curriculum for schools. The implications for environmental education including the work of voluntary organisations are many and some of these have been included in the discussion that follows.

Environmental education has not been specifically identified as one of the National Priority Areas and therefore, to a large extent, it will depend on how much it can be introduced as an aspect of those areas that have priority status. Care will need to be taken over the way that environmental education is woven into programmes to reflect National Priorities, Local Needs and Local Authority Policy. Whether or not inner city initiatives will be nominated as priority areas for INSET in the future is yet for the DES to decide. If so, then there are likely to be important implications for environmental education and the role of voluntary organisations.

Concern has been expressed in many quarters over the lack of emphasis given to the humanities in the National Priority Areas. Many environmental educators would like to see environmental education as a dimension of the whole curriculum and under present arrangements this seems difficult to achieve.

The local authority advisers appear to have a central role in the allocation of financial resources for INSET work. The fact that most local authorities have no adviser with specific or major responsibility for environmental education is a particular problem for organisations trying to persuade authorities to include environmental concerns in their INSET programmes. For each local authority it is important first to identify the preferred pattern of INSET; whether through short courses, long term secondments, school-based work or other approaches and then to devise programmes to meet these requirements.

In relation to fieldwork, particularly residential courses, the DES have stated that authorities are obliged to pay for fieldwork which is a compulsory part of an examination syllabus. Payment will normally be made for travel and tuition in these cases. However, there is the difficult issue of payment for cover of teachers while they are away assisting with field courses and currently union advice to teachers is that they should not work outside contract time. The present situation allows for the continuation of residential field courses at Advanced Level, but such courses for pupils below this age seem threatened. Clearly, fieldwork is an essential part of primary school environmental education, and this should be drawn to the attention of decision-makers wherever possible, otherwise there is likely to be a marked decline in the amount undertaken.

Some attempts to introduce environmental education into the school curriculum have raised problems since a good deal of material has a clear political dimension. The difficulty for teachers is that dealing with political aspects of topics can open them to accusations of political bias. However, the previous Secretary of State for Education and Science considered that political dimensions to issues should be included in the education of children. Consequently, materials produced for environmental education purposes should also focus on ways in which education should deal with values and attitudes. Methodologies of various kinds exist to help teachers in this difficult area of environmental education and INSET has an important contribution to make.

It is apparent that there is much interest in conservation work with children. But many teachers feel ill-equipped to cope and some local authorities have already begun to seek help from voluntary organisations with their in-service programmes. While the development of GRIST programmes within local authorities has been rapid, the establishment of particular voluntary organisations with an authority is usually a slow process, probably taking up to two years. After this, ideas can be introduced into programmes in the third year. This is partly due to the relatively long time-lag between planning programmes and their implementation. The general advice from established organisations to those new to this type of activity is 'develop personal contacts with particular authorities', so that relevant people are known, such as the appropriate adviser. General circulation of information and offers of help to authorities is not considered to be an effective way of progressing as the response is likely to be very poor. Thus, there appears to be no short cut open to the voluntary organisation but to approach each authority separately.

Working with a local authority involves identifying the particular needs of that local authority and this requires a dialogue between the organisation and the authority. It is also important to ensure that links are made between suggested programmes and the objectives of the authority. Target groups for INSET may also include borough staff working for the authority but not directly involved in teaching. The production of support materials for courses and the require-

ments for evaluation and monitoring are an important aspect of the whole process and are written specifically into DES GRIST recommendations.

One difficulty is that while GRIST ostensibly includes the Youth Service, most models developed within local authorities do not obviously fit the non-formal requirements. As a result the Youth Service has generally been left out. This in turn means that there are often difficulties for voluntary organisations interested in non-formal education when negotiating with the local authorities. It may be that direct communication with the relevant people in Her Majesty's Inspectorate, giving copies of proposals, may be a helpful way of progressing in the present situation. However, in the longer term, the voluntary sector should seek ways of becoming involved in an authority's own consultation process.

The Department of Education and Science requires LEA's to produce coordinated, planned programmes which contribute to the coherent development of teachers and other professionals. Voluntary organisations who wish to work with local authorities in their GRIST programmes will have to be very professional in their approaches, including the preparation of their proposals, and have to ensure that what is offered conforms to overall strategies within the authorities in terms of National Priorities, Local Needs and Local Authority Policy. Offerings should also be seen as part of a continuing process of professional development with clearly defined aims, outcomes (objectives), evaluation and costing.

Evaluation is a difficult aspect and at present there is a lack of clear guidance for potential contributors. However, it is apparent that the evaluation should be built into INSET from the beginning so that it can be evaluated at the end of the INSET and also again when teachers have put what they have learned into practice.

The amount of work involved in making a worthwhile contribution to GRIST programmes over the whole range of local authorities is very great, and single organisations will find it quite impossible to make any impact on their own. Ways should therefore be sought for more co-operation between organisations; and probably CEE has an important role in this respect. Also there is a need to sustain the momentum so far created, and this will involve continual dialogue so that environmental organisations do not remain too insular.

Selected reading

GRIST and Environmental Education, report of one-day conference, CEE, 1987.

Department of Education and Science, *Local Education Authority Training Grants Scheme: Financial Year 1987-88*, Circular no 6/86, HMSO.

Department of Education and Science, *Proposed New Specific Grant Arrangements for the In-Service and Training of Teachers*. A position paper prepared by the Department of Education and Science and the Welsh Office, HMSO, 1986.

National Council for Voluntary Youth Services (NCVYS), *Grant-Related In-Service Training: A Guide for implementing the Local Authority Training Grants Scheme in the in-service training of voluntary and paid staff in the youth service*, NCVYS, Leicester, 1987. ■

International developments

Tbilisi plus ten

Ten years after the major UNESCO/UNEP conference at Tbilisi, a congress was held this year to assess international progress and priorities in environmental education. John Smyth reports.

Professor J C Smyth
Chairman of the Scottish Environmental Education Council

'Tbilisi plus ten' may be a strange sounding title but not, one hopes, to anyone engaged in environmental education. In 1977, the 'First Intergovernmental Conference on Environmental Education' was held in Tbilisi, USSR, which set out an internationally agreed statement of the nature of environmental education and of the kinds of measures needed to prepare people of all countries, ages and persuasions to manage their environment better. Ten years is a convenient period of time over which to expect development. So ten years after Tbilisi, UNESCO-UNEP brought together nearly three hundred educators from eighty countries to assess progress in environmental education and discuss a strategy for the 1990's. This was the UNESCO-UNEP International Congress on Environmental Education and Training, held in Moscow from 17 - 21 August 1987.

During this time, neither environmental issues nor educational responses have stood still. Keynote speakers at the congress, and pre-circulated papers, highlighted many environmental issues which have intensified during this time, most of them bearing on the management of resources and rural development especially in the Third World. There have also been important international attempts to address the issues, notably the World Conservation Strategy (1980) and the World Commission on Environment and Development (1987), together with a growing volume of supporting research such as the Man and Biosphere programme. These in turn should feed the growth of appropriate education and the UNESCO-UNEP International

Environmental Education Programme has maintained a steady flow of projects and publications not all of which are as widely known as they deserve to be. There is also an encouraging spread of environmental education activity conducted by a range of agencies from international organisations and national governments to dedicated individuals whose personal energies have sometimes worked wonders. Much of the congress time was spent in the presentation of accounts of such activities and in drawing out lessons that may be learnt from them for future planning.

Identifying trends

One reviews such a diversity of material only with difficulty: as usual on such occasions, the main benefits were not from the presentations themselves so much as from the informal contacts, discussions and exchanges which they stimulated later. No doubt many of the papers will appear in print in due course, in UNESCO or other publications. From the discussions, formal and informal, one can only hope to identify trends and at this stage, they are bound to be personal impressions which may be altered or amplified as the material is digested.

Certainly there was evidence of development internationally in people's perception of their environment. There is growing awareness that quality of life and quality of environment are interdependent both at individual and public policy levels: if appropriate action is not always taken in response to awareness at least it is some advance to realise the existence of hazards. Public pressure on decision makers should help them to work for longer-term rather than short-term objectives.

Acceptance by decision makers - and educators - of the importance of environmental quality criteria is being made easier by the growing willingness of conservation interests to accept that the human species is as much part of the environmental system as any other, and to regard the sustainable development of resources for human well-being as much as a part of their job as the prevention and repair of environmental damage. Difficulties remain, for example in the integration of ecology and economics, but progress is being made towards concepts of ecological security for mankind.

There was general agreement that the main need now is for action

All of this has political implications, none more vital than the preservation of peace. As a destroyer of the environment, global warfare must be unrivalled. The educational implications of preserving peace were stressed by many speakers representing most political persuasions. Behind this, however, lie the complex problems of achieving a more equitable global distribution of resources - a new international economic order - and the way through these was far less clear.

At the levels of national and local politics environmental education should provide people with a better ability to control their own ecological fate, and perhaps, be less at the mercy of unsympathetic external forces.

An encouraging trend is towards recognition of the values of traditional wisdom in rural communities and of the positive impact rural people can have on management practices as illustrated by the Chipko movement and many others.

All of the above points have implications for education. There are still barriers to be broken down and gaps to be filled to achieve the best in environmental education- between different cultural systems, between different modes of study, between theorists and practitioners, between researchers and educators, between the aspirations of educators and the conditions of the real world in which they function. But communications are improving and gatherings like this congress certainly encourage collaboration and a sense of common commitment. We still need to improve our ways of assessing progress and evaluating our efforts, but progress has been made.

Future strategies

So what strategy have we for the future? There was general agreement that the main need now is for action and a draft outline 'International Strategy for Action in the field of Environmental Education and Training' for the 1990's was pre-circulated, discussed at the congress by three Commissions, and amendments suggested. The main headings - which were developed in the document - were:

1 *Access to information*: setting up a computerized system for information and exhange of experience, strengthening regional networks, development of the newsletter *Connect*.

2 *Research and experimentation*: research on content and methods, on other complementary aspects (eg population, nutrition, health education), and on the pedagogical approach to the question of values, on new communication strategies and on evaluation.

3 *Educational programmes and materials*: exchange of information on curriculum development, development of model curricula and of new teaching aids, curriculum evaluation.

4 *Training of personnel*: promoting pre- and in-service training.

5 *Technical and vocational education*: development of programmes and materials, training and developing teacher awareness, a priority activity relating to tourism.

6 *Educating and informing the public*: producing media-related education programmes, use of new communication media and activity teaching methods, creation of a bank of audio-visual programmes.

7 *General university education*: developing awareness of academic authorities, study programmes, in-service teacher training and improved institutional and intra-university cooperation.

8 *Specialist training*: initial and further training for specialists and professionals, training through research, development of study programmes, strengthening regional training capacity.

9 *International and regional cooperation*: exchange of information, promotion of research and training, study programmes, information on legal texts governing environmental education, regional action, mobilisation of technical and financial resources, inter-agency coordination and consultation.

One day was set aside for five symposia which covered the following topics:

1 Environmental problems and international understanding and cooperation: the role of environmental education.

2 Environmental Education and Training (EET): the contribution to socio-economic development.

3 Role of the media and new communication systems in the promotion of environmental education and information.

4 Role of biosphere reserves and other protected areas in the dissemination of ecological knowledge and training of specialists in ecology.

5 National experiences and the contribution of NGO's in the development of EET: trends and progress.

On the final day, the reports of the Commissions and the symposia were presented and a draft document circulated. A final report will be published in the near future.

Unwieldly as it may have appeared the whole event was encouraging. If the recommendations are taken up by those to whom they are directed it will have done immense good. It would be good to think that environmental education in what remains of the twentieth century will move in emphasis from its role of repairing

damage and attacking problems towards the development of a truly unified concept of a man/environment system in a state of positive health. We shall see. In the meantime we should be grateful to UNESCO and UNEP and to our hosts in the USSR for setting up another important marker on the way.

This article was adapted from a piece appearing in 'The Biosphere', published by the International Society for Environmental Education. ■

International Union for Conservation of Nature and Natural Resources (IUCN)

John Baines reports on the work of IUCN.

John Baines
Director of CEE

IUCN is the the major international conservation organisation providing the scientific base for international conservation activities. Its members include governments, government organisations and non-government organisations. Its work is carried out by staff at the headquarters in Gland, Switzerland and by a number of Commissions including 'Education and Training'.

IUCN is probably best known for the publication the *'World Conservation Strategy'* which outlined the most urgent environmental problems facing the world, the measures needed to overcome them and the means of preventing problems in the future. Published in 1980, IUCN is currently preparing 'World Conservation Strategy 2' to take account of new ideas.

UK members of IUCN meet regularly in the UK Committee for IUCN which is administered by the Nature Conservancy Council. All UK members of IUCN are invited to these meetings at which national and international conservation issues are discussed and appropriate action recommended. The Commission on Education and Training is represented on the Committee by Cassandra Philips, Professor John Smyth and John Baines.

Within Europe there are two regional committees of the Commission on Education and Training. The North West European Committee covers all North West Europe including Iceland, and organises a conference once a year. Last year it was held in Iceland and the main topic raised was the use of coastlines. In 1988, the meeting will look at Outdoor Education and will be based in Norway. Anyone interested in attending should contact CEE for more details. The East European Committee also meets annually, but over the past four years the committees have come together every other year at their annual conferences. The first of these joint meetings was in Finland and this was followed by one in Hungary. The next one will be in Norway.

The programme of IUCN is presented at the General Assembly held every three years. In 1988, the Assembly will be held in Costa Rica and the updated World Conservation Strategy will be presented. It will contain a section on Ethics and Equity to which Stephen Sterling has made a major contribution. The Commission on Education and Training will present its own Education Strategy which has been largely prepared by Professor John Smyth.

The IUCN has a regular *Bulletin* obtainable from the Headquarters in Gland.

Book reviews

Our Common Future - 'The Brundtland Report'

World Commission on Environment and Development, Oxford University Press, 1987, £5.95, ISBN 0 19 282080 X

Review by
Lloyd Timberlake
Senior Editor at the International Institute for Environment and Development

Twenty-two worthy men and women from 22 nations were asked by the United Nations to look into the sorry states of both environmental protection and economic development of poor nations and to recommend means of improvement. This independent 'World Commission on Environment and Development', headed by Norwegian Prime Minister Mrs Gro Harlem Brundtland, deliberated for three years and in April 1987 published its final report: *Our Common Future*. The report, 380 pages of grim reading in bland language, essentially looks at the future of key sectors of human endeavour and finds that none of these futures work. The world's present energy paths destroy forests in the North and are causing global warming, while the South's search for domestic energy in the form of firewood also consumes forests. Plant and animal species are disappearing at record - and accelerating - rates. Both Northern and Southern agricultural systems overtax farmland and are unsustainable. Present population growth rates mean more, not fewer, poor, hungry, ill-housed, unhealthy and illiterate people in the world each year. Developing country cities will grow by another 65 per cent between 1985 and 2000, while industrial development in the South threatens the health of these burgeoning cities. And while the real threats to 'security' are

environmental, all of our security efforts and money go into weapons systems.

The report, 380 pages of grim reading in bland language, essentially looks at the future of key sectors of human endeavour and finds that none of these futures work

Our Common Future is better on symptoms of crisis than on solutions. But it calls for governments and international agencies to put environmental concerns into central decision-making processes. It calls for a marriage of economic and ecological realities. It challenges governments, institutions and industries to make the goal of sustainable development - development which 'meets the needs of the present without compromising the ability of future generations to meet their own needs'- central to all plans and activities. But it does suggest that this will require major political changes in some countries to 'secure effective participation in decision-making' and in others to take a more global view of the effects of governmental policies.

The report offers a wealth of data on current environment and development trends and much food for thought on how to rearrange the world to reverse them for the better. For those interested in the Commission's major findings, the International Institute for Environment and Development has produced 40-page 'Readers Guide' with stunning photos.

Our Common Future: A Readers' Guide, IIED/ Earthscan, 3 Endsleigh Street, London WC1, £1.95 (discounts for bulk orders). ■

Earthrights - Education as if the planet really mattered

Sue Greig, Graham Pike, and David Selby, World Wildlife Fund and Kogan Page, 1987, £4.95, ISBN 1 85091 453 2

Review by

Mike Parry

Co-ordinator for environmental education across the curriculum, Valley Park School, Wolverhampton.

A synthesis of environmental and development issues which form part of a cross-curriculum teaching programme is the concern of the World Wildlife Fund and the Centre for Global Education. Their production of this book, which combines a philosophical and topical background to these issues and also practical suggestions for classroom activities, is a very welcome addition to existing publications. The authors present a holistic view of education which combines many diverse themes which have proliferated in recent years. Development education, environmental education, human rights education and peace education can be combined within the concepts of interrelatedness and interdependence.

Those teachers who are working to promote an education 'as if the planet really mattered' are sometimes hindered and disheartened by colleagues who suggest that their 'subject' is already overburdened and is not relevant to such an approach. This book provides solutions to such responses. It gives a succinct and positive review of the state of our planet, the need to examine teaching method and content, and suggestions for work with all age groups and for subject based approaches in the secondary school.

Earthrights attempts to show how those elements which already exist in our education service can be adapted and used to educate our pupils for the Earth. Scientific understanding, aesthetic appreciation, creative responses and spiritual influences are all included.

If this is understood by schools, and attempts are made to combine these elements in the total experience we offer children in schools, we are going some way to help future adult generations tread more lightly upon the Earth.

Once every few years there appears a book which is of interest to all teachers, is thought provoking and is eminently readable. Here is such a publication. It is the type of book which should be in all schools and can be used to stimulate ideas in initial training, in-service work and in curriculum reform. ■

Environmental Challenges - Learning for Tomorrow's World

Paul Wilkinson and Myriam Wyman (eds), The Althouse Press, The University of Western Ontario, 1986, $14.95 Canadian, ISBN 0 920354 15 7

Review by

William A H Scott

Lecturer at the School of Education, University of Bath.

***Environmental Challenges* is an appropriate title for a book which is a collection of some of the papers presented at the 1982 Man-Environment Impact Conference held in Hamilton Ontario, whose theme was 'Learning for Tomorrow's World'.**

There are five sections to the book: environmental dilemmas, educational approaches to these dilemmas, energy and conservation issues, economic and development issues and the role of non-governmental organizations and international groupings. The twenty-one papers that are presented focus on two themes which transcend the five sections; a range of current environmental issues which ought to be the concern of public and educationalists alike; and formal and informal educational approaches to the issues.

The examples chosen for examination are mainly drawn from the American continent - north and south, which is useful to a European audience. There are, for example, data and concerns from across the Atlantic on acidification that will usefully stand beside our own European knowledge. Authors include Barry Commoner and Paul Ehrlich and the contributions are fairly easily digestible. Only one is more than fourteen pages long.

For me it was worth getting the book just to read the paper on 'Communicating Environmental Values' by Robert Paehlke. In this well written, positive and common sense approach he provides much stimulus for us in our daily lives as well as in our work. He bravely puts forward a list of values for our consideration and then discusses each of them in a very readable way. There is enough here in just a few pages to keep a seminar or a group in the pub going well into the night. ■

Curriculum Guidelines for Environmental Education

Scottish Environmental Education Council, SEEC, 1987, £1.00, ISBN 0 946584 14 1. Limited copies available from SEEC, c/o Paisley College of Technology, Paisley, PA1 2BE.

Review by

Ewan McLeish

Head of the Formal Education Unit of CEE

These guidelines have been produced under the auspices of the Scottish Environmental Education Council (SEEC), drawing on the expertise of a wide-ranging working party including the Scottish Curriculum Development Service. They were produced at a time which coincided with the production of CEE's EYE Teacher's Pack and were distributed with it, to Scottish schools. Although relating mainly to the Scottish education system, there is much of relevance and value to everyone interested in the implementation of environmental education policies and programmes in schools.

The guidelines are mainly aimed at headteachers and those in senior management in schools, and at directors of education and their advisers, rather than the classroom teacher. In this respect it (rightly) differs from the CEE document *Schools - Learning for Life* which was designed as more of a 'hands on' manual. There is the intention, however, to support the guidelines with a range of documents for specific areas of the curriculum, for example, in primary schools, art and design, biology, and so on.

The document sets out an impeccable rationale for environmental education with an emphasis on the development of values and attitudes towards living harmoniously with our local and global surroundings - in short, the development of an environmental ethic. It analyses why, with the high level of awareness and acceptance of the need to teach 'environmentally', the history of environmental education in Scotland has been 'disappointing', despite isolated examples of good practice. It concludes that 'few schools, if any, either primary or secondary, have a coherent, whole school policy on environmental education (or) have developed progressive, continuous and coherent programmes of environmental learning'. This analysis could equally apply elsewhere!

The document aims to address this problem, setting out clear guiding principles and their application to different stages of the formal curriculum in Scotland, and the opportunities for implementation. There is also a welcome section on the role of environmental organisations in developing a better partnership with schools and colleges.

The overall message, however, is coordination - in developing a whole-school policy, and then in implementing it. There is a useful framework for the production of a school 'EE' policy given as an appendix but it is a pity there are no case studies on examples of good practice. That is what inspires people. ■

Council for Environmental Education

MEMBER ORGANIZATIONS

Assistant Masters and Mistresses Association
Association for Science Education
Association of Agricultural Education Staffs
Association of Agriculture
Association of County Councils
Association of Metropolitan Authorities
Association of Polytechnic Teachers
BBC Education
British Ecological Society
British Trust for Conservation Volunteers
Centre for Environmental Interpretation
Civic Trust Heritage Education Group
Committee of Vice-Chancellors and Principals
Community Service Volunteers
Conservation Trust
Council for Urban Studies Centres
Countryside Commission
Countrywide Holidays Association
Environmental Education Advisers Association
Field Studies Council
Forestry Commission
Friends of the Earth
Geographical Association
Historic Houses Association
Historical Association
Independant Broadcasting Authority
Inland Waterways Association
Institute of Biology
Institution of Environmental Sciences
Keep Britain Tidy Group
Marine Conservation Society
Museums Association
National Association for Environmental Education
National Association for Outdoor Education
National Association of Field Studies Officers
National Association of Head Teachers
National Association of Teachers in Further and Higher Education
National Federation of City Farms
National Farmers Union
National Federation of Women's Institutes
National Institute of Adult Continuing Education
National Trust
National Union of Teachers
Nature Conservancy Council
Open University
Prince of Wales Committee
Royal Institute of British Architects
Royal Society for Nature Conservation
Royal Society for the Prevention of Cruelty to Animals
Royal Society for the Protection of Birds
Royal Town Planning Institute
Secondary Heads Association
Society of Education Officers
Society for the Interpretation of Britain's Heritage
Sports Council
Streetwork
Town and Country Planning Association
Tree Council
Welsh Joint Education Committee
The Wildfowl Trust
World Wildlife Fund (UK)
Young People's Trust for Endangered Species
Youth Hostels Association

OBSERVERS

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